

Capacity Development of the National Capital Region Planning Board Package 2 Component B TA No. 7055-IND

**Volume I-D: Detailed Estimates** 

**Detailed Project Report for** Water Supply System in Panipat







July 2010

NCR Planning Board Asian Development Bank

# Capacity Development of the National Capital Region Planning Board (NCRPB) – Component B (TA No. 7055-IND)

FINAL REPORT

Volume I-D: Detailed Project Report for Panipat Water Supply Detailed Estimate

July 2010



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**Appendix E-1**: Details of Cost Estimate

# **Appendix E-1: Abstract Cost Estimate**

S. No	Item	Cost in Rs. Million
1	Providing out lets in WJC Canal and Delhi Parallel Canal of 100 cusecs each and construction of inlet channel up to RWPS site (As per estimate from Irrigation Department)	47.88
2	Construction of Raw Water Pumping Station comprising of Sump, Pump House building and 5nos. VT Pumping sets with required electrical switch gear (Total KW 225)@Rs25000 per KW	5.625
3	Construction of Water Treatment Plant complete of 100 MLD including SCADA system @ Rs.25 lac/MLD	250.00
4	Construction of Clear Water Pumping Station comprising of Sump, Pump House building and 3 nos. Pumping sets with required electrical switch gear(Total 1140 KW)@Rs25000 per KW	28.50
5	Construction of Clear Water Reservoir near WTP of 10 ML capacity @Rs.2000 per KL	20.00
6	Providing 33 KV Electrical feeder line from 132 KV GSS to WTP site along with construction of 33/11 KV & 33/0.4KV substation 1500KVA & 315KVA (As per estimate of Electricity department)	21.60
7	Cost of land 4 hectares land required for construction of WTP, RWPH, CWPS, supporting infrastructure etc.@ Rs.100 lac/Hectare	40.00
8	Cost of pumping main pipe line BWSC/MS/DI complete with valves, chambers, rail line and NHW crossings etc. complete	256.72
9	Construction of 17 nos. OHSR with a staging of 20m and a total storage capacity of 26.75 ML complete in all respect @Rs.8000 per KL and one GLSR of 2 ML @3000	217.00
10	Improvement of distribution system in zones where water supply network already exist or un-served areas by laying of new, additional or higher sized pipelines with required appurtenances, chambers, thrust blocks etc.	251.61
11	Providing Bulk water meters (1 no EMFB type) and 33000 Domestic water meters complete including installation and commissioning	155.00
12	Replacement of consumer service pipe lines with MDPE pipes for 33000 connections @Rs.1500 per connection	54.45
13	NRW Identification and Reduction Works lump sum	214.76
14	Centralized Training Center of PHED lump sum	50.00
	Sub Total	1613.15
	Physical contingencies @3% of sub total	48.39
	Design Supervision and third party inspection @ 3%	48.39
	Provision for Information Education and Communication @ 1%	16.13
	Provision for Environmental Mitigation @ 1%	16.13
	Provision for Institutional Development @ 1%	16.13
	Provision for Incremental Administration @ 2%	32.263
	Total	1790.60

**Appendix E-2**: Rate Analysis of Various Pipes

# **Appendix E-2: Basis for Cost Estimates**

The costing of Water Supply Project of Panipat City has been performed based on the following sources:

- Design of the Proposed Improvements.
- PWD Standard Schedule of Rates (SOR) of Haryana state.
- RUIDP Rajasthan Standard Schedule of Rates (SOR)
- Consultant's data bank and experience on similar projects.
- Nominally applicable labor and material costs for items not present in the aforementioned SOR.

Block rates have been determined for improvement of construction of WTP, Pumping Stations etc. as these items are proposed to be put for bidding on turn key basis on Lump sum rates. In respect of distribution system block cost estimate has been made for the time being and detailed estimate will be incorporated at the time of final report. For projecting the cost of each activity reference has been made to prevailing rates for current projects like Rohatak, Jhalawar and Meerut Water supply Projects involving construction of Water Treatment Plant with Raw and Clear Water pumping stations and also improvement of distribution system.

# 1. <u>Canal outlet</u>, <u>Inlet Channel and road bridge</u>:

This work will be executed by the Irrigation department who owns and operate the canals. An estimate has been obtained from the Executive Engineer, Irrigation Department, Panipat and the provision of Rs.47.88 m has been made based on the same.

# 2. Raw Water Pumping Station including Sump:

It is proposed to provide a raw water sump with pump house located above it. There will be 5 VT pump sets installed in the pump house. Three of these will work at a time and remaining 2 will act as stand bye. The cost of a pumping station including building, electro-mechanical equipment, piping and instrumentation is normally taken as Rs.25000/- per KW of installed capacity (Rs.12000 for electro-mechanical equipment and Rs.13000 for civil and misc. works). The total installed capacity in RWPH is estimated at 225 KW (Five pumps of 45 KW each). This gives the estimated cost as 5.625 m.

### 3. Construction of Water Treatment Plant:

It is proposed to construct WTP complete with SCADA system, fully automatic operation along with sludge disposal etc. for a total capacity of 100 MLD. Recently tenders were invited for a WTP of 100MLD for Meerut city where rate received was around Rs.250m. The same in case of a 200MLD WTP for Ghaziabad city was around Rs.550m. In Rohatak, a WTP of 18.5 MLD has been constructed for which work was awarded about 2 years back at Rs.35 m. Looking to these experiences, cost of Rs.2.5m per MLD has been adopted. Thus cost of providing a WTP 100MLD is estimated at Rs.250 m.

# 4. Clear Water Pumping Station:

It is proposed to provide a Clear Water Pumping Station with sump. There will be 3 pump sets installed in the pump house. Two of these will work at a time and one will act as stand bye. The cost of a pumping station including building, electro-mechanical equipment, piping and instrumentation is normally taken as Rs.25000/- per KW of installed capacity (Rs.12000 for electro-mechanical equipment and Rs.13000 for civil and misc.works). The total installed capacity in CWPS is estimated at 1140 KW (Three pumps of 380 KW each). This gives the estimated cost as Rs.28.50 m.

# 5. Clear Water Reservoir:

It is proposed to construct a CWR near WTP for storing treated water before pumping with a capacity of 10ML. This capacity is based on 2 hours treatment capacity. The general market rate for construction of CWR of such large capacities is estimated at Rs.2000 per KL. Accordingly, estimated cost of construction of 10ML CWR will be Rs.20.00m.

# 6. Feeder Power Line and Electric Sub Station:

It is proposed to draw power from the 132 KV Grid Sub Station located nearly 6 km away at 33KV. An electric sub station 33/11KV of 2000KVA shall be constructed near the CWPS and one 33/0.4 KV sub station near RWPS for the power requirement on HT in CWPS and on LT in RWPS, WTP, Campus and in CWPS. Haryana State Electricity board has indicated cost of providing power line and sub stations at Rs.21.60m. Accordingly, provision is made at Rs.21.60m.

# 7. Land Acquisition:

PWD(WSSD) Panipat has already initiated action for acquisition of 16.5 acres of land required for construction of WTP, RWPH, CWPS and other infrastructure near the canals. The case has been recommended by the Senior Town Planner to the Director Town and Country Planning Department GOH vide letter dated 13.6.2008(Annexure-8) for amendment in the development plan. The reserve price for land prescribed by the respective revenue agency is reported to be Rs.2.5m per acre along with an annual royalty payment of Rs.15000 per year with an increase of Rs.500 per year for 33 years. Thus a value of Rs.3 m per acre may be adopted for acquiring this land. The estimated cost of this land thus comes to Rs.49.5 m. The total land will have to be acquired in Phase I only.

The land required for construction of Zonal OHSRs has been identified. However, attempt has been made to get land for this purpose in existing parks or other government land as far as possible. Land required in sectors will be allotted by HUDA in its area free of charge as provision is kept by them in newly developed areas for providing infrastructure facilities.

# 8. Pumping Main Pipe Lines:

It is proposed to provide two pumping main pipe lines after a short distance from the CWPS. These two pipe lines will be interconnected at the tail to make a loop. Every OHSR will be connected to one of these pipe lines. These pipe lines are proposed to be of DI. The present cost estimate is based on the prices of DI pipes offered by M/S Electrosteels Ltd. Vide letter dated 4.2.2009 as follows:

300mm	Rs. 2543.00 per meter
350mm	Rs. 3197.00 per meter
400mm	Rs. 3833.00 per meter
450mm	Rs. 4547.00 per meter
500mm	Rs. 5325.00 per meter
600mm	Rs. 7015.00 per meter
700mm	Rs. 9622.00 per meter
800mm	Rs.12550.00 per meter
900mm	Rs.15314.00 per meter
	350mm 400mm 450mm 500mm 600mm 700mm 800mm

The pipes are to be laid on roads requiring road cutting. Air valves, Scour valves, sluice valves together with chambers will have to be provided. Laying of pipe lines will require crossing of railway line at 4 locations and National highway at two locations and canal at two locations and oil pipe line at one place. This will require using trench less technology for pipe laying. Detailed cost estimate is given in a separate annexure

# 9. Construction of 17 OHSRs and One GLSR:

It is proposed to construct 17 OHSRs for Zones with a total storage capacity of 25.75ML with a staging of 20m in each case. The per liter rate for OHSR of such large capacities with 20m staging is coming to Rs.8 these days in different states and accordingly adopted. The total cost of this activity is estimated to be Rs.206 m. This cost includes all pipes, valves, plinth protection, and bulk water meters with data transmission, level data transmission and electric connection. One GLSR will be constructed for Zone 9 on hill top of 2 ML capacity. Estimated cost of constructing CWR at ground level is normally taken as rs.2000/Kl but in the present case the GLSR will be constructed on hill top and the approach is through congested area of city. Accordingly, per KL cost is estimated to be Rs.3000. The total estimated cost of this GLSR thus comes to Rs.6.00m. Total estimated cost of this activity thus comes to Rs.212 m. These tanks will be got constructed on Lump sum basis on design build concept.

### 10. Improvement of distribution system in areas already covered:

As detailed analysis of distribution network has been done for the 18 distribution zones. The design sheets and abstract of pipes zone wise of different pipe dia is given in design annexure. In some streets pipe will be replaced and in some new pipes will be provided. Detailed estimate of each zone is given in estimate annexure. Rate analysis has been done for some items which is also given in estimate annexure.

# 11. Bulk and Domestic Water Meters:

It is proposed to provide 1 Electromagnetic full bore flow meter on pumping main immediately after CWPS. These will be complete with control panel and data transmission system etc. The cost of one such meter for 900mm size has been reported to be Rs.650000/- as per market enquiry.

There are in all 33000 connections in both HUDA and PHED areas. Most of these connections are 15mm size. It is proposed to use EC certified good quality water meters to last long and give trouble free service. The meters are proposed to be with interface for remote reading and required modem for actual data transmission. The cost one such meter has been reported to be Rs.4500 including installation. The estimated cost of these meters comes to 148.5m.

Total estimated cost of both EMF flow meters and domestic meters comes to Rs.155 m.

### 12. Consumer service line replacement:

There are in all 33000 service connections in Panipat town. Consumer service pipe lines are proposed to be replaced with MDPE pipes. The cost of replacement of existing 15mm GI pipe with MDPE pipe for an average length of 10m per connection including ferrule, compression coupling and road cutting etc. has been estimated at Rs.1650/- per connection. This is based on estimation done in other similar projects like Jhalawar where it was taken as Rs.1500 per connection during 2007 and hence increase by 10%. The total estimated cost comes to 54.45 m.

# 13. NRW Identification and reduction program:

The water meters both on production system and on consumer end are proposed to be provided now under this project. As such there is no assessment of UFW or NRW. It would be desirable that leak detection and rectification through DMA strategy suggested is undertaken for one area and results analyzed before taking up full scale leak detection and rectification work. Accordingly for the present a lump sum provision of Rs.198.755 million is proposed in the estimate.

# 14. Centralised Training Center:

A lump sum cost of Rs.50.00m is proposed for establishing a Central Training Institute for the Department. Detailed estimate for the center may developed after identification of training needs and its quantum for the whole state.

# 15. Physical & Price Contingency:

A lump sum provision of 3% of total cost has been made to take care of any unforeseen items at the time of implementation. The period of construction has been taken as 36 months including bidding. Additional provision of 3% has been made for Design and Supervision consultants and third party inspection, 1% for Information education and communication, 1% for Environmental Mitigation, 1% for Institutional Development and 2% for Incremental Administration (Expenditure of Implementing agency for the project Implementation)

**Appendix E-3**: Detailed Estimate of Pumping/Rising Main

**Appendix E-3: Rate Analysis** 

HDPE Pipes								
Supply, Laying, Jointing, Field Testing, Commissioning	Rate of Pipe as	Local	Laying	Testing	Contractor	<b>Total Rate</b>	Specials	Total Rate
complete at site of HDPE (PE80 Grade Coumpound)	per quotation of	Handling	and	and	s Profit at		10% of	including
Pipes PN-8.0 (8.0 kg/sqcm) as per IS:4984 and	M/S Kriti letter	& storage	Jointing	commissio	10%		total Cot	specials at 10%
specifications for water application, including all cost of	dated 4-3-09	at 1%	at 3%	ning at 4%				
material, labour required, transportation, loading,								
unloading & stacking etc. complete.								
110mm PN8	261.19	2.61	7.84	10.45	28.21	310.29	31.03	341.32
125mm PN8	335.93	3.36	10.08	13.44	36.28	399.08	39.91	438.99
140mm PN8	420.00	4.20	12.60	16.80	45.36	498.96	49.90	548.86
160mm PN8	547.48	5.47	16.42	21.90	59.13	650.41	65.04	715.45
180mm PN8	694.14	6.94	20.82	27.77	74.97	824.64	82.46	907.10
200mm PN8	855.38	8.55	25.66	34.22	92.38	1,016.19	101.62	1,117.81
225mm PN8	1,078.91	10.79	32.37	43.16	116.52	1,281.75	128.17	1,409.92
250mm PN8	1,334.26	13.34	40.03	53.37	144.10	1,585.10	158.51	1,743.61
280mm PN8	1,669.80	16.70	50.09	66.79	180.34	1,983.72	198.37	2,182.09
315mm PN8	2,113.74	21.14	63.41	84.55	228.28	2,511.12	251.11	2,762.24
355mm PN8	2,676.70	26.77	80.30	107.07	289.08	3,179.92	317.99	3,497.91
400mm PN8	3,475.93	34.76	104.28	139.04	375.40	4,129.40	412.94	4,542.35
450mm PN8	4,398.75	43.99	131.96	175.95	475.07	5,225.72	522.57	5,748.29
500mm PN8	5,423.37	54.23	162.70	216.93	585.72	6,442.96	644.30	7,087.26
560mm PN8	6,795.87	67.96	203.88	271.83	733.95	8,073.49	807.35	8,880.84
630mm PN8	8,547.90	85.48	256.44	341.92	923.17	10,154.91	1,015.49	11,170.40

FOR:NCR, Excise 8.24% included, CST at 2% against form C included, Inspection extra

**Rate Analysis: MDPE Pipes** 

Service Connections: Supply, Laying, Jointing, Field Testing, Commissioning complete at site of MDPE (PE 80 Grade Coumpound) Pipes PN-16 (16 kg/sqcm) as per ISO4427 and specifications for water application, including all cost of material, labour required, transportation, loading, unloading & stacking	Jain irrigation letter	Transportatio n and local taxes at 10%	Local handling and storage at 1%	Breakage at 1%		Contractors profit at 10%	Total
etc. complete.							
16 mm Dia							
20 mm Dia SDR 9	22.85	2.29	0.23	0.02	0.69	0.26	26.33
25 mm Dia SDR 11	29.10	2.91	0.29	0.03	0.87	0.33	33.54
32 mm Dia SDR 11	47.95	4.80	0.48	0.05	1.44	0.55	55.26
40 mm Dia							
50 mm Dia							

Inclusive of excise; CST/LST extra; rates are ex-jalgaon

# Rate Analysis: uPVC Pipe Class III (6kg/sqcm)

Supply, Laying, Jointing, Field Testing & Commissioning complete at site of <b>uPVC Pipe Class III (6kg/sqcm)</b> as per IS 4985 : 2000, ISI marked,					
suitable for elastomeric sealing rings, with Rubber Rings ISI marked EPDM as per IS 5382: 1985, transporting to site, lowering in trenches, aligning,					
laying & jointing as per L-Section and field testing the laid pipelines etc. complete work as per specifications. The bulk density of uPVC pipe shall be					
1.39 to 1.44 gm/cc. The total quantity of additives like plasticizers, stabilizers, lubricants & fillers shall not exceed more than 7%. The rates includes all					
cost of material, labour required, transportation, loading, unloading & stacking etc. complete and also includes the cost of EPDM 'ISI marked' rubber					
gasket					
110 mm	297.00				
125 mm					
140 mm	490.00				
160 mm	632.00				
180 mm	812.00				
200 mm	1015.00				
225 mm	1277.00				
250 mm	1584.00				
280 mm	1986.00				
315 mm	2546.00				

Rate of Kriti 10-7-09

Rate Analysis: Ductile Iron (DI) K-7 Pipes

Supply, Laying, Jointing Field Testing & Commissioning complete at site as per specifications of centrifugally cast (spun) Ductile Iron K7 Pressure Pipes (S &S) ISI marked for water conforming to IS 8329/2000 with push on type EPDM 'ISI marked' rubber gasket jointing as per IS 5382 specifications. Pipe shall be outside Zinc coated with finishing layer of Bitumen and have factory cement mortar lining as per IS 8329/2000. The rates includes all cost of material, labour required, transportation, loading, unloading & stacking etc. complete and also includes the cost of EPDM 'ISI marked' rubber gasket	Rate of electrosteel 449/4-2-09 Rs per Meter	from	Local handling and storage @1%	Breakag e @ 1%	Total	Laying and Jointing of pipes & hydrauli c testing @ 2.5%	Contractors Profit at 10%	Total	Specials at 3%	Total Rate inclusive of specials
100 mm	918	832	8.32	8.32	848.92	21.22	87.01	957	28.71	986
150 mm	1,395	1,265	12.65	12.65	1,290.03	32.25	132.23	1,455	43.64	1,498
200 mm	1,540	1,540	15.40	15.40	1,570.80	39.27	161.01	1,771	53.13	1,824
250 mm	2,005	2,005	20.05	20.05	2,045.10	51.13	209.62	2,306	69.18	2,375
300 mm	2,543	2,543	25.43	25.43	2,593.86	64.85	265.87	2,925	87.74	3,012
350 mm	3,197	3,197	31.97	31.97	3,260.94	81.52	334.25	3,677	110.30	3,787
400 mm	3,833	3,833	38.33	38.33	3,909.66	97.74	400.74	4,408	132.24	4,540
450 mm	4,547	4,547	45.47	45.47	4,637.94	115.95	475.39	5,229	156.88	5,386
500 mm	5,325	5,325	53.25	53.25	5,431.50	135.79	556.73	6,124	183.72	6,308
600 mm	7,015	7,015	70.15	70.15	7,155.30	178.88	733.42	8,068	242.03	8,310
700 mm	9,622	9,622	96.22	96.22	9,814.44	245.36	1,005.98	11,066	331.97	11,398
750 mm	11,135	11,135	111.35	111.35	11,357.70	283.94	1,164.16	12,806	384.17	13,190
800 mm	12,550	12,550	125.50	125.50	12,801.00	320.03	1,312.10	14,433	432.99	14,866
900 mm	15,314	15,314	153.14	153.14	15,620.28	390.51	1,601.08	17,612	528.36	18,140
1000 mm	18,354	18,354	183.54	183.54	18,721.08	468.03	1,918.91	21,108	633.24	21,741

With 10.3% excise duty in 100 mm and 150 mm, with Nill Excise duty against valid Excise Duty Exemption certificate to be provided by the buyer along with the order / before production Central Excise Notification No. 6/2006 as amended by Central Excise Notification No. 6/2007 dated 1st March 2007.

Inspection charges included, FOR NCR, rubber gasket included, No CST against form C.

Appendix D-4 : Detailed Estimate of Distribution System Summary & Details of Zone-1 to Zone-18

# Detailed Estimate for Distribution System - Zone ${\bf 1}$

S No	Item	Quantity	Unit	Rate	Reference for	Amount	Quantity Reference/Calculations
					Rate		
1	Excavation for pipelines running under pressure in trenches and pits, in streets and lanes including trimming and dressing sides, levelling of beds of trenches to correct grade, cutting joint holes, cutting trees and bushes, etc. refilling consolidation and watering of refill, in 15 cm layers and restoration of unmetalled or unpaved surface to its original condition, including the cost of dewatering of rain water, diversion of traffic, night signals, fixing caution boards, crossing over trenches for access to the houses, watching, fancing etc. and disposal of surplus soil outside and inside the town, involving lead upto one km in ordinary soil (for new pipe line and replacement pipes)				Item 6.9 Haryana PWD & 300% above vide amendment dated 1.1 08 and 23.1.09		Trench Width is pipe dia plus 300 mm, Minimum earth cover of 1 meter, average earth cover of 1.15 m, Average depth of excavation is 1.15 plus pipe dia. For 110 mm pipe excavation is (1.15+.11)*(.3+.11) ie 0.5166*L where L is length of Pipe
A	Without timbering and shoring upto 1.5 metres depth	8082	100 CUM	4732		382,434	
В	Excavation for thrust block	98.0		4732		4,637	
2	Supply, Laying, Jointing, Field Testing, Commissioning complete at site of HDPE (PE 80 Grade Coumpound) Pipes PN-8.0 (8.0 kg/sqcm) as per IS:4984 and specifications for water application, including all cost of material, labour required, transportation, loading, unloading & stacking etc. complete. (New Pipe Line)						Factor for Excavation Quantity
	110 mm	8200	RM	310	RA	2,544,409	0.5166
	125 mm	418	RM	399	RA	166,817	0.5334
	140 mm	250	RM	499	RA	124,740	0.5676
	160 mm	131	RM	650	RA	84,878	0.6026
	180 mm		RM	825	RA	409,021	0.6384
	225 mm		RM	1282	RA	117,921	0.7314
3	Sub Total Supply, Laying, Jointing, Field Testing, Commissioning complete at site of HDPE (PE80 Grade Coumpound) Pipes PN-8.0 (8.0 kg/sqcm) as per IS:4984 and specifications for water application, including all cost of material, labour required, transportation, loading, unloading & stacking etc. complete. (replacement of line with a new pipeline)						
	125 mm	1838		399	RA	733,318	0.5334
	140 mm		RM	499	RA	422,370	0.5676
	160 mm	1366		650		888,130	0.6026
	180 mm		RM	825	RA	331,092	0.6384
	200 mm		RM	1016		284,534	0.675
	225 mm		RM	1282	RA	362,734	0.7314
	250 mm 280 mm		RM RM	1585 1984	RA RA	55,479 99,186	0.77 0.8294
	355 mm		RM	3180	RA RA	46,109	0.8294
	Sub Total	5114		3100	141	10,107	0.713

4 Dismantling pipeline of G.I./A.C./P.V.C./S.W./H.D.P.E. pipe including breaking the joints, lifting the pipes and stacking to the place as directed by Engineer-in-charge with all leads and lifts including cleaning the surface, etc. complete. (In place of dismentaled pipe another pipe is to be laid as such excavation for dismentalling is included in excavation for laying new pipe line)  5 Dismentaling flanged joints for cast iron pipes, valves and specials including carriage of bolts, nuts and washers to store,  50 to 100 mm internal diameter of pipe, valve, special 125 to 200 mm internal diameter of pipe, valve. snecial 300 to 375 mm internal diameter of pipe, 4 Per 17.50  61,368  61,	
including breaking the joints, lifting the pipes and stacking to the place as directed by Engineer-in-charge with all leads and lifts including cleaning the surface, etc. complete. (In place of dismentaled pipe another pipe is to be laid as such excavation for dismentalling is included in excavation for laying new pipe line)  5 Dismentaling flanged joints for cast iron pipes, valves and specials including carriage of bolts, nuts and washers to store,  50 to 100 mm internal diameter of pipe, valve, special Joint item 28.38   125 to 200 mm internal diameter of pipe, valve. special Joint vide   41 vide   41 vide   42 vide   43 vide   44 vide   44 vide   45 vide   45 vide   45 vide   46 vide   47 vide   47 vide   47 vide   48 vide	
pipes and stacking to the place as directed by Engineer-in-charge with all leads and lifts including cleaning the surface, etc. complete. (In place of dismentaled pipe another pipe is to be laid as such excavation for dismentalling is included in excavation for laying new pipe line)  5 Dismentaling flanged joints for cast iron pipes, valves and specials including carriage of bolts, nuts and washers to store,  50 to 100 mm internal diameter of pipe, valve, special  125 to 200 mm internal diameter of pipe, valve. special  125 to 200 mm internal diameter of pipe, valve. special  126 to 200 mm internal diameter of pipe, valve. special  127 to 200 mm internal diameter of pipe, valve. special  128 to 200 mm internal diameter of pipe, valve. special	
Engineer-in-charge with all leads and lifts including cleaning the surface, etc. complete. (In place of dismentaled pipe another pipe is to be laid as such excavation for dismentalling is included in excavation for laying new pipe line)  5 Dismentaling flanged joints for cast iron pipes, valves and specials including carriage of bolts, nuts and washers to store,  50 to 100 mm internal diameter of pipe, valve, special Joint item 28.38 leads of plus 250% leads of plu	
Engineer-in-charge with all leads and lifts including cleaning the surface, etc. complete. (In place of dismentaled pipe another pipe is to be laid as such excavation for dismentalling is included in excavation for laying new pipe line)  5 Dismentaling flanged joints for cast iron pipes, valves and specials including carriage of bolts, nuts and washers to store,  50 to 100 mm internal diameter of pipe, valve, special Joint item 28.38 leads of plus 250% leads of plu	
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dismentalling is included in excavation for laying new pipe line)  5 Dismentaling flanged joints for cast iron pipes, valves and specials including carriage of bolts, nuts and washers to store,  50 to 100 mm internal diameter of pipe, valve, special Joint item 28.38 125 to 200 mm internal diameter of pipe, depending of Per loss	
laying new pipe line)  5 Dismentaling flanged joints for cast iron pipes, valves and specials including carriage of bolts, nuts and washers to store,  50 to 100 mm internal diameter of pipe, valve, special Joint item 28.38  125 to 200 mm internal diameter of pipe, of Per d.83 plus 250% 41  valve, special Joint vide	
5 Dismentaling flanged joints for cast iron pipes, valves and specials including carriage of bolts, nuts and washers to store,  50 to 100 mm internal diameter of pipe, valve, special  125 to 200 mm internal diameter of pipe, valve, special  125 to 200 mm internal diameter of pipe, valve, special  126 per 6.83 plus 250% 41 vide	
pipes, valves and specials including carriage of bolts, nuts and washers to store,  50 to 100 mm internal diameter of pipe, valve, special  125 to 200 mm internal diameter of pipe, valve, special  125 to 200 mm internal diameter of pipe, valve, special  126 to 200 mm internal diameter of pipe, valve, special  127 to 200 mm internal diameter of pipe, valve, special  128 to 200 mm internal diameter of pipe, valve, special  129 to 200 mm internal diameter of pipe, valve, special	
pipes, valves and specials including carriage of bolts, nuts and washers to store,  50 to 100 mm internal diameter of pipe, valve, special  125 to 200 mm internal diameter of pipe, valve. special  125 to 200 mm internal diameter of pipe, valve. special  126 to 200 mm internal diameter of pipe, valve. special  127 to 200 mm internal diameter of pipe, valve. special  128 to 200 mm internal diameter of pipe, valve. special	
pipes, valves and specials including carriage of bolts, nuts and washers to store,  50 to 100 mm internal diameter of pipe, valve, special  125 to 200 mm internal diameter of pipe, valve. special  125 to 200 mm internal diameter of pipe, valve. special  126 per 6.83 plus 250% 41 vide	
of bolts, nuts and washers to store,  50 to 100 mm internal diameter of pipe, valve, special  10 Per Joint 10 Haryana PWD item 28.38 125 to 200 mm internal diameter of pipe, valve, special  10 Per Joint 10 Per Joi	
50 to 100 mm internal diameter of pipe, valve, special 10 Per Joint 10 Item 28.38 125 to 200 mm internal diameter of pipe, valve, special 10 Item 28.38 10 I	
valve, special         Joint         item 28.38           125 to 200 mm internal diameter of pipe,         6 Per         6.83 plus 250%         41           valve, special         Joint         vide	
125 to 200 mm internal diameter of pipe, 6 Per 6.83 plus 250% 41 valve. special vide vide	
125 to 200 mm internal diameter of pipe, 6 Per 6.83 plus 250% 41 valve, special vide vide	
valve, special Joint vide	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
T. and the state of the state o	
25-1-07	
	Quantity of valves taken roughly
	at one per KM
IS 14846 including nuts and bolts marked	
with IS 1363, rubber sheet marked with IS	
638 etc carriage, loading, unloading,	
stacking, handling, rehandling etc complete	
in all respect to the satisfaction of engineer	
in charge ( Makes AARKO, VENUS,	
100 mm i/d 11 each 3698 Haryana PWD 40,678	
150 mm i/d 3 each 5709 A & C slip No 17,127	
200 mm i/d 1 each 9945 CZC-6 dated 3- 9,945	
250 mm i/d 1 each 15589 7-09 15,589	
350 mm i/d 1 each 30395 30,395	
7 Providing and fixing cast iron single air Haryana PWD si	size of air valve taken one sixth of
	pipe dia and nomber of air valves
	aken at one per km
handling, rehandling etc drilling, tapping,	and at one per kin
screwing etc in valve connections complete	
in all respect to the satisfaction of engineer-	
in-charge in-charge	
40 mm i/d 15 each 1619 24,285	
8 Sluice valve and air valve chamber: 32 each 5000 LS 160,000	
Providing and constructing Brick masonry	
valve chamber with 15 cm thick 1:3:6	
proportion PCC bedding, excluding	
excavation, Brick masonry in C.M. 1:5	
Proportion, 20 mm thick 1:4 plaster, precast	
RCC frame and cover, etc. complete as	
directed by Engineer-in-charge. (Wall	
thickness: 0.23 M for depth of 1.2 M and	
9 Thrust Block: Providing and laying cement 98 cum 2754 Haryana PWD 269,845	
concrete in RCC (M-15, 1:2:4) with stone item 10.79	
aggregate 20 mm nominal size for thrust plus 340%	
blocks including compaction, curing, vide	
finishing, excluding cost of reinforcement & amendment 23-	
shuttering etc., Complete as per drawings	
and specifications and as directed by	
10 Thrust Block: Shuttering for precast plain 392 Sqm 40 Haryana PWD 15,861	
or RC concrete wall plates, bed plates item 9.15 shelves etc plus 225% vide	
shelves etc   Dius 225% vide   11   Providing TMT Steel Reinforcement as per   39   Quintal   4127   Haryana PWD   161,768	
IS: 1786 for RCC work including item 18.22	
straightening, cutting, bending, placing in plus 350%	
position and binding etc as per drawing all vide	
complete including cost of binding wire, amendment 23-	
labour, wastage etc.	
12 Road Work: 1,179,722	
13 Mislenious Items 786,481	
Total 9,831,018	

# Detailed Estimate for Distribution System - Zone 2 $\,$

S No	Item	Quantity	Unit	Rate	Reference for Rate	Amount	Quantity Reference/Calculations
1	Excavation for pipelines running under pressure in trenches and pits, in streets and lanes including trimming and dressing sides, levelling of beds of trenches to correct grade, cutting joint holes, cutting trees and bushes, etc. refilling consolidation and watering of refill, in 15 cm layers and restoration of unmetalled or unpaved surface to its original condition, including the cost of dewatering of rain water, diversion of traffic, night signals, fixing caution boards, crossing over trenches for access to the houses, watching, fancing etc. and disposal of surplus soil outside and inside the town, involving lead upto one km in ordinary soil (for new pipe line and replacement pipes)				Item 6.9 Haryana PWD & 300% above vide amendment dated 1.1 08 and 23.1.09		Trench Width is pipe dia plus 300 mm, Minimum earth cover of 1 meter, average earth cover of 1.15 m, Average depth of excavation is 1.15 plus pipe dia. For 110 mm pipe excavation is (1.15+.11)*(.3+.11) ie 0.5166*L where L is length of Pipe
A	Without timbering and shoring upto 1.5 metres depth	5261	CUM	4732		248,962	
В	Excavation for thrust block	63.1	100 CUM	4732		2,985	
2	Supply, Laying, Jointing, Field Testing, Commissioning complete at site of HDPE (PE 80 Grade Coumpound) Pipes PN-8.0 (8.0 kg/sqcm) as per IS:4984 and specifications for water application, including all cost of material, labour required, transportation, loading, unloading & stacking etc. complete. (New Pipe Line)						Factor for Excavation Quantity
	110 mm	3755	RM	310	RA	1,165,153	0.5166
	140 mm	149	RM	499	RA	74,345	0.5676
	160 mm		RM	650	RA	203,902	0.6026
3	Sub Total Supply, Laying, Jointing, Field Testing, Commissioning complete at site of HDPE (PE80 Grade Coumpound) Pipes PN-8.0 (8.0 kg/sqcm) as per IS:4984 and specifications for water application, including all cost of material, labour required, transportation, loading, unloading & stacking etc. complete. (replacement of line with a new pipeline)	4218	KM				
	110 mm	527	RM	310	RA	163,525	0.5166
	125 mm	1522.5		399		607,607	0.5334
	140 mm	1431.5		499	RA	714,261	0.5676
	160 mm	1039		650	RA	675,772	0.6026
	180 mm		RM	825		210,283	0.6384
	200 mm		RM	1016		242,870	0.675
	225 mm	26.5		1282		33,966	0.7314
	280 mm	110.5		1984		219,201	0.8294
	315 mm	33.5		2511	RA	84,123	0.8906
	355 mm		RM	3180	RA	195,565	0.975
	Sub Total	5246	KIVI	1			

			1		ı		
4	Dismantling pipeline of	5246	RM	12	LS	62,952	
	G.I./A.C./P.V.C./S.W./H.D.P.E. pipe						
	including breaking the joints, lifting the						
	pipes and stacking to the place as directed by						
	Engineer-in-charge with all leads and lifts						
	including cleaning the surface, etc. complete.						
	(In place of dismentaled pipe another pipe is						
	to be laid as such excavation for						
	dismentalling is included in excavation for						
	C						
	laying new pipe line)						
5	Dismentaling flanged joints for cast iron						
	pipes, valves and specials including carriage						
	of bolts, nuts and washers to store,						
	of boits, fluts and washers to store,						
-			_				
	50 to 100 mm internal diameter of pipe,	10	Per	3.50	Haryana PWD	35	
	valve, special		Joint		item 28.38 plus		
	125 to 200 mm internal diameter of pipe,	6	Per	6.83	250% vide	41	
	valve, special		Joint		amendment dt 23-		
	300 to 375 mm internal diameter of pipe,	4	Per	17.50	1-09	70	
	valve, special		Joint	10			
	^		Joint				Overtity of all and
6	Providing and fixing cast iron double						Quantity of valves taken
	flanged sluice valves PN -1.6 marked with						roughly at one per KM
	IS 14846 including nuts and bolts marked						
	with IS 1363, rubber sheet marked with IS						
	638 etc carriage, loading, unloading,						
	stacking, handling, rehandling etc complete						
	in all respect to the satisfaction of engineer						
	in charge ( Makes AARKO, VENUS,						
1	100 mm i/d	4	each	3698	Haryana PWD	14,792	
	150 mm i/d	4	each		A & C slip No	22,836	
	200 mm i/d	1	each		CZC-6 dated 3-7-	9,945	
	250 mm i/d	1		15589		15,589	
	300 mm i/d		each	18944		18,944	
7	Providing and fixing cast iron single air		cucii	10711	Haryana PWD A	10,711	size of air valve taken one
,							
	valves marked with IS 14845 including				& C Slip CZC/3-		sixth of pipe dia and nomber
	carriage, loading, unloading, stacking,				7-09		of air valves taken at one per
	handling, rehandling etc drilling, tapping,						km
	screwing etc in valve connections complete						
	in all respect to the satisfaction of engineer-						
	in-charge						
	in-charge						
	40 mm i/d	10	each	1619		16,190	
8	Sluice valve and air valve chamber:	21	each	5000	LS	105,000	
	Providing and constructing Brick masonry						
	valve chamber with 15 cm thick 1:3:6						
	proportion PCC bedding, excluding						
	excavation, Brick masonry in C.M. 1:5						
	Proportion, 20 mm thick 1:4 plaster, precast						
	RCC frame and cover, etc. complete as						
	directed by Engineer-in-charge. (Wall						
	thickness : 0.23 M for depth of 1.2 M and						
	0.35 M for balance depth exceeding 1.2 M)						
	0.33 WI for barance deput exceeding 1.2 M )						
9	Thrust Block: Providing and laying cement	63.09	cum	2754	Haryana PWD	173,720	
-					item 10.79 plus		
	concrete in RCC (M-15 . 1:2:4 ) with stone				340% vide		
	concrete in RCC (M-15, 1:2:4) with stone			1	2 10/0 VIGC		Î.
	aggregate 20 mm nominal size for thrust				amandment 22 1		
	aggregate 20 mm nominal size for thrust blocks including compaction, curing,				amendment 23-1-		
	aggregate 20 mm nominal size for thrust blocks including compaction, curing, finishing, excluding cost of reinforcement &				amendment 23-1- 09		
	aggregate 20 mm nominal size for thrust blocks including compaction, curing, finishing, excluding cost of reinforcement & shuttering etc., Complete as per drawings						
	aggregate 20 mm nominal size for thrust blocks including compaction, curing, finishing, excluding cost of reinforcement & shuttering etc., Complete as per drawings and specifications and as directed by						
	aggregate 20 mm nominal size for thrust blocks including compaction, curing, finishing, excluding cost of reinforcement & shuttering etc., Complete as per drawings						
	aggregate 20 mm nominal size for thrust blocks including compaction, curing, finishing, excluding cost of reinforcement & shuttering etc., Complete as per drawings and specifications and as directed by						
	aggregate 20 mm nominal size for thrust blocks including compaction, curing, finishing, excluding cost of reinforcement & shuttering etc., Complete as per drawings and specifications and as directed by						

10	Thrust Block: Shuttering for precast plain	252.36	Sqm	40	Haryana PWD	10,211	
	or RC concrete wall plates, bed plates				item 9.15		
	shelves etc				plus225% vide		
					amendment 23-1-		
11	Providing TMT Steel Reinforcement as per	25	Quintal	4127	Haryana PWD	104,142	
	IS: 1786 for RCC work including				item 18.22 plus		
	straightening, cutting, bending, placing in				350% vide		
	position and binding etc as per drawing all				amendment 23-1-		
	complete including cost of binding wire,				09		
	labour, wastage etc.						
12	Road Work:					809,548	
13	Mislenious Items					539,699	
	Total					6,206,535	

							Annexure E 2-3
S No	Item	Quantity	Unit	Rate	Reference for Rate	Amount	Quantity Reference/Calculations
1	Excavation for pipelines running under pressure in trenches and pits, in streets and lanes including trimming and dressing sides, levelling of beds of trenches to correct grade, cutting joint holes, cutting trees and bushes, etc. refilling consolidation and watering of refill, in 15 cm layers and restoration of unmetalled or unpaved surface to its original condition, including the cost of dewatering of rain water, diversion of traffic, night signals, fixing caution boards, crossing over trenches for access to the houses, watching, fancing etc. and disposal of surplus soil outside and inside the town, involving lead upto one km in ordinary soil (for new pipe line and replacement pipes)				Item 6.9 Haryana PWD & 300% above vide amendment dated 1.1 08 and 23.1.09		Trench Width is pipe dia plus 300 mm, Minimum earth cover of 1 meter, average earth cover of 1.15 m, Average depth of excavation is 1.15 plus pipe dia. For 110 mm pipe excavation is (1.15+.11)*(.3+.11) ie 0.5166*L where L is length of Pipe
A	Without timbering and shoring upto 1.5 metres depth	9112	100 CUM	4732		431,192	
В	Excavation for thrust block	112	100 CUM	4732		5,285	
2	Supply, Laying, Jointing, Field Testing, Commissioning complete at site of HDPE (PE 80 Grade Coumpound) Pipes PN-8.0 (8.0 kg/sqcm) as per IS:4984 and specifications for water application, including all cost of material, labour required, transportation, loading, unloading & stacking etc. complete. (New Pipe Line)						Factor for Excavation Quantity
	110 mm	10287	RM	310	RA	3,191,836	0.5166
	125 mm		RM	399		353,190	0.5334
	140 mm		RM	499		343,284	0.5676
	160 mm Sub Total	635 12494	RM PM	650	RA	412,683	0.6026
3	Supply, Laying, Jointing, Field Testing, Commissioning complete at site of HDPE (PE80 Grade Coumpound) Pipes PN-8.0 (8.0 kg/sqcm) as per IS:4984 and specifications for water application, including all cost of material, labour required, transportation, loading, unloading & stacking etc. complete. (replacement of line with a new pipeline)						
	110 mm	403	RM	310	RA	124,893	0.5166
	125 mm	1712		399		683,233	0.5334
	140 mm		RM	499		194,844	0.5676
	160 mm		RM	650		204,228	0.6026
	180 mm 200 mm		RM RM	825 1016		505,503 160,050	0.6384 0.675
	225 mm		RM	1282		224,946	0.7314
	250 mm		RM	1585		618,189	0.77
	315 mm		RM	2511		203,401	0.8906
	355 mm Sub Total	24 4260	RM	3180	RA	74,728	0.975
4	Dismantling pipeline of G.I./A.C./P.V.C./S.W./H.D.P.E. pipe including breaking the joints, lifting the pipes and stacking to the place as directed by Engineer-incharge with all leads and lifts including cleaning the surface, etc. complete. (In place of dismentaled pipe another pipe is to be laid as such excavation for dismentalling is included in excavation for laying new pipe line)	4260	RM	12	LS	51,114	
	80 mm. 100 mm.		R.M.			-	
	100 mm. 125 mm.		R.M.			-	
	150 mm.		R.M.			-	
	200 mm.		R.M.			-	
-	250 mm.		R.M.			-	
	300 mm. 350 mm.		R.M.			-	
	400 mm.		R.M.			-	
	450 mm.		R.M.			-	
	500 mm.		R.M.			=	

sluice valves PN -1 of marked with IS 14846 including ust and holts marked with IS 638 etc carriage, loading, unboding, stacking, handling, erelanding etc complete in all respect to the satisfaction of engineer in charge (Makes AARKO, VENUS, LEADER, SI, PANIA, 100 mm i/d 2 each 5709 & C slip No CZC. 11,418 220 mm i/d 1 each 9045 d dated 3-7.09 9.945 250 mm i/d 1 each 15589 15,5	5	Dismentaling flanged joints for cast iron pipes,						
Incompanies								
special amendment dt 23- special 30 to 37 mm internal diameter of pipe, valve, special 6 6 Prividing and fixing cast iron double flanged including and fixing cast iron double flanged including and fixing and fixing cast iron double flanged including mix and boils mated with St 193, rubber sheet marked with St 935, rubber sheet marked sheet sheet with St 935, rubber sheet marked with St 935, rubber sheet marked with St 935, rubber sheet marked with St 935, ru		special				item 28.38 plus		
special 6 Providing and fixing cast iron double flanged share valves PV-16 marked with IS 148-46 including muts and bolts marked with IS 1363, nubber sheet marked with IS 1845 of securing, loading, unloading, satsking, handling, ethandling stee dealing in thorge ( Makes ARKO, VERSUS, LEADER, S.I., PANA, 100 mm id 2 [cuch 570) & C slip No CZC. 11,418   200 mm id 1 [cuch 15380] 300 mm id 1 [cuch 15380] 700 mm id 15380   700 mm i			6	Per Joint		amendment dt 23-	41	
sluice valves PN -1 of marked with IS 14846 including nuts and botts marked with IS 1638 etc carriage, loading, utolanding, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge (Makes AARKO, VENUS, LEADER, SI, PANIA,  100 mm i/d  100 mm i/d  100 mm i/d  200 mm i/d  200 mm i/d  200 mm i/d  100			4	Per Joint	17.50	1-09	70	
150 mm i/d   2 each   5709 & C slip No CZC   11.418   200 mm i/d   1 each   9945   6 dated 3-7-09   15.889   300 mm i/d   1 each   15589   16.889   15.899   15.899		sluice valves PN -1.6 marked with IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge ( Makes AARKO, VENUS, LEADER, SI, PANJA,						Quantity of valves taken roughly at one per KM
250 mm i/d 1 each 15589 15.589 15.589 15.589 300 mm i/d 1 each 15589 15.589 18.944 18.						•	,	
250 mm i/d 300 mm i/d 1 each 15589 1620 mm i/d 17 Providing and fixing cast iron single air valves marked with IS 14845 including carriage, loading, unloading, stacking, handling, rehandling ete drilling, tapping, screwing ete in valve connections complete in all respect to the satisfaction of engineer-in-charge  40 mm i/d 17 each 1619 27,523  8 Slutice valve and air valve chamber: Providing and constructing Brick masonry valve chamber with 15 cm thick 1:36 proportion PCC bedding, excluding execavation, Brick masonry in C.M. 1:3F roportion, 20 mm thick 1:4 plaster, precast RCC frame and cover, etc. complete as directed by Engineeri-in-charge, (Wall thickness: 0.23 M for depth of 1.2 M and 0.35 M for balance depth exceeding 1.2 M)  7 Thrust Block: Providing and laying cement concrete in RCC (M-15, 1:24-) with stone aggregate 20 mm nominal size for thrust blocks including compaction, curing, finishing, excluding cost of reinforcement & shuttering etc., Complete as per drawings and specifications and as directed by Engineer.  10 Thrust Block: Shuttering for precast plain or RC concrete wall plates, bed plates shelves etc.  11 Providing TMT Steel Reinforcement as per IS: 1786 for RCC work including straightening, cutting, bending, placing in position and binding etc as per drawing all complete including cost of binding wire, labour, wastage etc.  28 Rough with 15 14845 including cost of binding wire, labour, wastage etc.  39 Thrust Block: Shuttering for precast plain or RC concrete will plates, bed plates shelves etc.  446.76 Sqm  446.76 Sqm  446.76 Sqm  447.76 Sqm  447.76 Sqm  447.76 Sqm  448.78 Sqm  4								
300 mm i/d  Providing and fixing cast iron single air valves marked with IS 14845 including carriage, loading, unloading, stacking, handling, rehandling ted drilling, tapping, screwing et in valve connections complete in all respect to the satisfaction of engineer-in-charge  40 mm i/d  Sluice valve and air valve chamber: Providing and constructing Brick masonry valve chamber with 15 cm thick 1:36 proportion PCC bedding, excluding exervation, Brick masonry in CM. 1:5 Proportion, 20 mm thick 1:4 plaster, precast RCC frame and cover, etc. complete as inferted by Engineer-in-charge. (Wall thickness: 0.23 M for depth of 1:2 M and 0.35 M for balance depth exceeding 1:2 M)  Thrust Block: Providing and laying cement concrete in RCC (M-15, 1:24) with stone aggregate 20 mm nominal size for thrust blocks including compaction, curing, finishing, excluding cost of reinforcement & shuttering etc., Complete as per drawings and specifications and as directed by Engineer.  Thrust Block: Shuttering for precast plain or RC concrete will plates, bed plates shelves etc.  Thrust Block: Shuttering for precast plain or RC concrete will plates, bed plates shelves etc.  Providing TMT Steel Reinforcement as per 1S: 1786 for RCC work including straightening, cutting, bending, placing in position and binding et ca sper drawing all complete including cost of binding wire, labour, wastage etc.  Road Work:  12 Road Work:  13 Mislenious Items  14 Ago with a size of air valve taken one sixth of pid dia and nomber of air valves taken at one per km  16 each 1619  27,523  8 cach 1619  27,523  8 cach 3000 LS 175,000  175,000  18,994  19 January PWD 18,974  110,994  111,69 cum 27,54 Haryana PWD 18,077  112,89,884						0 dated 3-7-09	,	
7 Providing and fixing cast from single air valves marked with IS 14845 including carriage, loading, unloading, stacking, handling, rehandling etc drilling, tapping, screwing etc in valve connections complete in all respect to the satisfaction of engineer-in-charge  40 mm i/d  117 each  1619  27,523  8 Sluice valve and air valve chamber: Providing and constructing Brick masonry valve chamber with 15 cm thick 13:6 proportion PCC bedding, excluding excavation, Brick masonry in C.M. 1:5 Proportion, 20 mm thick 13-flaster, precast RCC frame and cover, etc. complete as directed by Engineer-in-charge, (Wall thickness: 0.23 M for depth of 1.2 M and 0.35 M for balance depth exceeding 1.2 M)  9 Thrust Block: Providing and laying cement concrete in RCC (M-15, 1:2:4) with stone aggregate 20 mm nominal size for thrust blocks including compaction, curing, finishing, excluding cost of reinforcement as battering etc., Complete as per drawing 8 and specifications and as directed by Engineer-information for proportion of the providing and laying cost of reinforcement as per IS. 1786 for RCC work including straightening, cutting, bending, placing in position and binding etc as per drawing all complete including post of ridaying in position and binding etc as per drawing all complete including post of ridaying in position and binding etc as per drawing all complete including cost of binding wire, labour, wastage etc.  13 Mislenious Items  Haryana PWD A & C Slip CZC/3-7  and 1619  27,523  40 LS  175,000  175,000  184,75  18,075  184,366  184,366  184,366  184,366  184,366  184,366  184,366  184,366  184,366  184,366  184,366  184,366  184,366  184,366							,	
Sluice valve and air valve chamber: Providing and constructing Brick masonry valve chamber with 15 cm thick 1:3:6 proportion PCC bedding, excluding excavation, Brick masonry in C.M.  1:5 Proportion, 20 mm thick 1:4 plaster, precast RCC frame and cover, etc. complete as directed by Engineer-in-charge. (Wall thickness: 0.23 M for depth of 1.2 M and 0.35 M for balance depth exceeding 1.2 M )  9 Thrust Block: Providing and laying cement concrete in RCC (M-15, 1:2:4) with stone aggregate 20 mm nominal size for thrust blocks including compaction, curing, finishing, excluding cost of reinforcement & shuttering etc., Complete as per drawings and specifications and as directed by Engineer.  10 Thrust Block: Shuttering for precast plain or RC concrete wall plates, bed plates shelves etc hitem 9.15 plus 25% vide  11 Providing TMT Steel Reinforcement as per 1S: 1786 for RCC work including straightening, cutting, bending, placing in position and binding et cas per drawing all complete including cost of binding wire, labour, wastage etc.  12 Road Work:  13 Mislenious Items  15 Sum of the Alexander of the Ale		Providing and fixing cast iron single air valves marked with IS 14845 including carriage, loading, unloading, stacking, handling, rehandling etc drilling, tapping, screwing etc in valve connections complete in all respect to the				& C Slip CZC/3-7-	***	
and constructing Brick masonry valve chamber with 15 cm thick 1:3:6 proportion PCC bedding, excluding excavation, Brick masonry in C.M.  1:5 Proportion, 20 mm thick 1:4 plaster, precast RCC frame and cover, etc. complete as directed by Engineer-in-charge. (Wall thickness: 0.23 M for depth of 1.2 M and 0.35 M for balance depth exceeding 1.2 M)  9 Thrust Block: Providing and laying cement concrete in RCC (M-15, 1:2:4) with stone aggregate 20 mm nominal size for thrust blocks including compaction, curing, finishing, excluding cost of reinforcement & shuttering etc., Complete as per drawings and specifications and as directed by Engineer.  10 Thrust Block: Providing and laying cement concrete in RCC (M-15, 1:2:4) with stone aggregate 20 mm nominal size for thrust blocks including cost of reinforcement & shuttering etc., Complete as per drawings and specifications and as directed by Engineer.  10 Thrust Block: Shuttering for precast plain or RC concrete wall plates, bed plates shelves etc  11 Providing TMT Steel Reinforcement as per IS: 1786 for RCC work including straightening, cutting, bending, placing in position and binding etc as per drawing all complete including cost of binding wire, labour, wastage etc.  12 Road Work: 12,289,884  13 Mislenious Items 15,289,922		40 mm i/d	17	each	1619		27,523	
concrete in RCC (M-15, 1:2:4) with stone aggregate 20 mm nominal size for thrust blocks including compaction, curing, finishing, excluding cost of reinforcement & shuttering etc., Complete as per drawings and specifications and as directed by Engineer.  10 Thrust Block: Shuttering for precast plain or RC concrete wall plates, bed plates shelves etc  11 Providing TMT Steel Reinforcement as per IS: 1786 for RCC work including straightening, cutting, bending, placing in position and binding etc as per drawing all complete including cost of binding wire, labour, wastage etc.  12 Road Work:  13 Mislenious Items  140 Haryana PWD item 9.15 item 18.22 plus 350% vide amendment 23-1- ing item 18.22 plus 350% vide amendment 23-1- ing item 18.22 plus 350% vide amendment 23-1- ing item 18.29,884		and constructing Brick masonry valve chamber with 15 cm thick 1:3:6 proportion PCC bedding, excluding excavation, Brick masonry in C.M. 1:5 Proportion, 20 mm thick 1:4 plaster, precast RCC frame and cover, etc. complete as directed by Engineer-in-charge. (Wall thickness: 0.23 M for depth of 1.2 M and 0.35 M for balance depth	35	each	5000	LS	175,000	
RC concrete wall plates, bed plates shelves etc item 9.15  Providing TMT Steel Reinforcement as per IS: 1786 for RCC work including straightening, cutting, bending, placing in position and binding etc as per drawing all complete including cost of binding wire, labour, wastage etc.  Road Work: 1,289,884  Mislenious Items 1,22 plus 350% vide amendment 23-1-109  1,289,884		concrete in RCC (M-15, 1:2:4) with stone aggregate 20 mm nominal size for thrust blocks including compaction, curing, finishing, excluding cost of reinforcement & shuttering etc., Complete as per drawings and	111.69	cum	2754	item 10.79 plus 340% vide amendment 23-1-	307,541	
Providing TMT Steel Reinforcement as per IS: 1786 for RCC work including straightening, cutting, bending, placing in position and binding etc as per drawing all complete including cost of binding wire, labour, wastage etc.  Road Work:  Road Work:			446.76	Sqm	40	item 9.15	18,077	
13 Mislenious Items 859,922		1786 for RCC work including straightening, cutting, bending, placing in position and binding etc as per drawing all complete including cost of binding wire, labour, wastage etc.	45	Quintal	4127	Haryana PWD item 18.22 plus 350% vide amendment 23-1-	,	
							, ,	
		Mislenious Items Total					859,922 10,749,029	

### Detailed Estimate for Distribution System - Zone 4

S No	Item	Quantity	Unit	Rate	Reference for Rate	Amount	Quantity Reference/Calculations
1	F				It 6 0 III		Tourse Widelie sine die also 200 aug
1	Excavation for pipelines running under				Item 6.9 Haryana PWD & 300% above		Trench Width is pipe dia plus 300 mm,
	pressure in trenches and pits, in streets and						Minimum earth cover of 1 meter,
	lanes including trimming and dressing sides,				vide amendment dated		average earth cover of 1.15 m, Average
	levelling of beds of trenches to correct grade,				1.1 08 and 23.1.09		depth of excavation is 1.15 plus pipe
	cutting joint holes, cutting trees and bushes,						dia. For 110 mm pipe excavation is
	etc. refilling consolidation and watering of						(1.15+.11)*(.3+.11) ie 0.5166*L where
	refill, in 15 cm layers and restoration of						L is length of Pipe
	unmetalled or unpaved surface to its original						
	condition, including the cost of dewatering						
	of rain water, diversion of traffic, night						
	signals, fixing caution boards, crossing over						
	trenches for access to the houses, watching,						
	fancing etc. and disposal of surplus soil						
	outside and inside the town, involving lead						
	upto one km in ordinary soil (for new pipe						
	line and replacement pipes)						
A	Without timbering and shoring upto 1.5	5461	100 CUM	4732		258,435	
	metres depth						
В	Excavation for thrust block	69.6	100 CUM	4732		3,291	
С	With timbering and shoring upto 1.5 metres		100 CUM	6300		-	
D	depth With timbering and shoring exceeding 1.5		100 CUM	6492		-	
	metres depth, but upto 2.25 metres depth						
Е	With timbering and shoring exceeding 2.25 metres depth, but upto 3 metres depth		100 CUM	6992		-	
2	Supply, Laying, Jointing, Field Testing, Commissioning complete at site of HDPE						Factor for Excavation Quantity
	(PE 80 Grade Coumpound) Pipes PN-8.0						
	(8.0 kg/sqcm) as per IS:4984 and						
	specifications for water application,						
	including all cost of material, labour						
	required, transportation, loading, unloading						
	& stacking etc. complete. (New Pipe Line)						
	, , , , , , , , , , , , , , , , , , ,						
	110 mm	4688	RM	310	RA	1,454,502	0.5166
	125 mm	62	RM	399	RA	24,544	0.5334
	140 mm	39	RM	499	RA	19,459	0.5676
	160 mm		RM	650	RA	-	0.6026
	180 mm		RM	825	RA	-	0.6384
	200 mm		RM	1016	RA	-	0.675
	225 mm		RM	1282	RA	-	0.7314
	250 mm		RM	1585	RA	-	0.77
	280 mm		RM	1984	RA	-	0.8294
	315 mm		RM	2511	RA	-	0.8906
	355 mm		RM	3180	RA	-	0.975
	400 mm		RM	4129	RA	-	1.085
	450 mm		RM	5226	RA	-	1.2
	500 mm		RM	6443	RA	-	1.32
	Sub Total	4788	RM				
3	Supply, Laying, Jointing, Field Testing,						
	Commissioning complete at site of HDPE						
	(PE80 Grade Coumpound) Pipes PN-8.0 (8.0						
	kg/sqcm) as per IS:4984 and specifications						
l	for water application, including all cost of						
ĺ	material, labour required, transportation,						
	loading, unloading & stacking etc. complete. (replacement of line with a new pipeline)						
		1					
	(replacement of line with a new pipeline)						1
	110 mm	4052		310		1,257,155	0.5166
	110 mm 125 mm	1140	RM	399	RA	454,957	0.5334
	110 mm 125 mm 140 mm	1140 185	RM RM	399 499	RA RA	454,957 92,308	0.5334 0.5676
	110 mm 125 mm 140 mm 160 mm	1140 185 121	RM RM RM	399 499 650	RA RA RA	454,957 92,308 78,699	0.5334 0.5676 0.6026
	110 mm 125 mm 140 mm	1140 185 121 37	RM RM	399 499	RA RA RA RA	454,957 92,308	0.5334 0.5676
	110 mm 125 mm 140 mm 160 mm 180 mm 200 mm 225 mm	1140 185 121 37 48	RM RM RM RM RM RM	399 499 650 825 1016 1282	RA RA RA RA RA RA	454,957 92,308 78,699 30,512 48,269	0.5334 0.5676 0.6026 0.6384 0.675
	110 mm 125 mm 140 mm 160 mm 180 mm 200 mm 225 mm 250 mm	1140 185 121 37 48	RM RM RM RM RM RM	399 499 650 825 1016 1282 1585	RA RA RA RA RA RA	454,957 92,308 78,699 30,512 48,269	0.5334 0.5676 0.6026 0.6384 0.675 0.7314
	110 mm 125 mm 140 mm 160 mm 180 mm 200 mm 225 mm	1140 185 121 37 48	RM RM RM RM RM RM RM	399 499 650 825 1016 1282	RA RA RA RA RA RA RA	454,957 92,308 78,699 30,512 48,269	0.5334 0.5676 0.6026 0.6384 0.675
	110 mm 125 mm 140 mm 160 mm 180 mm 200 mm 225 mm 250 mm 250 mm 315 mm 355 mm	1140 185 121 37 48	RM RM RM RM RM RM RM RM RM RM	399 499 650 825 1016 1282 1585 1984 2511 3180	RA R	454,957 92,308 78,699 30,512 48,269 - 71,330 - 43,945	0.5334 0.5676 0.6026 0.6384 0.675 0.7314 0.77 0.8294 0.8906 0.975
	110 mm 125 mm 140 mm 160 mm 180 mm 200 mm 225 mm 250 mm 250 mm 315 mm 3355 mm 400 mm	1140 185 121 37 48	RM R	399 499 650 825 1016 1282 1585 1984 2511 3180 4129	RA R	454,957 92,308 78,699 30,512 48,269 - 71,330 - 43,945	0.5334 0.5676 0.6026 0.6384 0.675 0.7314 0.77 0.8294 0.8906 0.9075 1.085
	110 mm 125 mm 140 mm 160 mm 180 mm 200 mm 225 mm 250 mm 250 mm 315 mm 355 mm	1140 185 121 37 48	RM RM RM RM RM RM RM RM RM RM	399 499 650 825 1016 1282 1585 1984 2511 3180	RA R	454,957 92,308 78,699 30,512 48,269 - 71,330 - 43,945	0.5334 0.5676 0.6026 0.6384 0.675 0.7314 0.77 0.8294 0.8906 0.975

GLACATY CA W. ALD DE. pipe including broking the joints, filting the pipes and stacking to the place as directed by Engineers including broken the place of discontrained pipe another pipe is to be hald as such executation for discontrained pipe another pipe is to be hald as such executation for discontrained pipe another pipe is to be hald as such executation for discontrained pipe another pipe is to be hald as such executation for discontrained pipe another pipe is to be hald as such executation for discontrained pipe another pipe is to be hald as such executation for discontrained pipe another pipe is to be hald as such executation for discontrained pipe another pipe is to be hald as such executation for discontrained pipe another pipe and pipe another pipe an									
GLIA.C.P.V.C.S.W.H.D.P.E. pipe including brothers the site in thing the pipes and stacking to be place as directed by Progressive students the pipes and stacking to the place and titis. If a place of disursentated pipe another pipe is to be laid as such excession for disursentating is included in excession for disursentation for disursentati			67,734	LS	12	RM	5645	Dismantling pipeline of	4
Including breaking the planes. In Sings the pipes and states to the place of dismertalizing the surface, see, complete, the place of dismertalizing the surface, see, complete, the place of dismertalizing its braided in executation for laying new pipe line)    300 mm.			* *						
pipes and stacking to the place as directed by Engineerin charge with all leads and life including cleaning the surface, etc. complete. (In place of dismentated pipe another pipe is to be laid as such excavation for laying new pipe line)			ļ						
Fingineer-in-charge with all leads and life including claring the surface, occumples, the claring claring the surface, occumples to the bal as such excavation for slaving reserve pipe limb)   R.M.									
Including cleaning the surface, etc. complete. (in place of dismental place is more place) in the laid as such excavation for dismental place is included in excavation for dismental place is included in excavation for laying new pipe line)   R.M.									
In place of dismentalled pipe another pipe is to be had as such executation for dismentalling is included in exeavation for dismentalling is included in exeavation for laying now pipe line)   Somm.			ļ					Engineer-in-charge with all leads and lifts	
In place of dismentalled pipe another pipe is to be had as such executation for dismentalling is included in exeavation for dismentalling is included in exeavation for laying now pipe line)   Somm.			ļ					including cleaning the surface, etc. complete.	
bo be laid as such excavation for dismensularing is included in excavation for laying new pipe line)			ļ						
Some									
So mm									
St. mm			ļ						
190 mm								laying new pipe line)	
100 mm									
100 mm									
150 mm			-						
150 mm			-			R.M.		100 mm.	
150 mm			-			R.M.		125 mm.	
200 mm			_						
250 mm									
350 mm									
350 mm			-						
450 mm.   R.M.   -			-			R.M.		300 mm.	
450 mm.   R.M.   -						R.M.		350 mm.	
450 mm.   R.M.									
So to mm.   10 m   18.20   Haryana PWD item   22.33   28.38 plus 250% vide   35   35   35   35   35   35   35   3									
S Dissentating flanged joints for cast rore pipes, valves, special   125 to 200 mm internal diameter of pipe, valves, special   125 to 200 mm internal diameter of pipe, valves, special   125 to 200 mm internal diameter of pipe, valves, special   125 to 200 mm internal diameter of pipe, valves, special   125 to 200 mm internal diameter of pipe, valves, special   125 to 200 mm internal diameter of pipe, valves, special   125 to 200 mm internal diameter of pipe, valves, special   125 to 200 mm internal diameter of pipe, valves, special   125 to 200 mm internal diameter of pipe, valves, special   125 to 200 mm internal diameter of pipe, valves, special   125 to 200 mm internal diameter of pipe, valves and specials etc outside from the trenches and stacking at a nearest convenient place   100 mm   18.20									
pipes, valves and specials including carriage of botts, nuts and washers to store,   10 Per Joint   3.50   Haryana PWD item   28.38 plus 250% vide   35   35   35   35   35   35   35   3						R.M.		500 mm.	_
pipes, valves and specials including carriage of botts, nuts and washers to store,   10 Per Joint   3.50   Haryana PWD item   28.38 plus 250% vide   35   35   35   35   35   35   35   3								Dismentaling flanged joints for cast iron	5
So to 100 mm internal diameter of pipe, valves, special   10   Per Joint   3.50   Haryana PWD item   28.38 plus 250% vide   125 to 200 mm internal diameter of pipe, valves, special   300 to 375 mm internal diameter of pipe, valves, special   300 to 375 mm internal diameter of pipe, valves, special   400 to 450 mm internal diameter of pipe, valves, special   400 to 450 mm internal diameter of pipe, valves, special   500 to 325 mm internal diameter of pipe, valves, special   22.05   -			ļ						
Sto 100 mm internal diameter of pipe, valve, special   125 to 200 mm internal diameter of pipe, valve, special   17.50   17.			ļ						
valve, special   28.38 plus 250% vide   125 to 200 mm internal diameter of pipe, valve, special   300 to 375 mm internal diameter of pipe, valve, special   4 Per Joint   17.50   70     41     4   4   4   4   4   4   4			ļ					or bons, nuts and wasners to store,	
valve, special   28.38 plus 250% vide			<u> </u>						
valve, special   28.38 plus 250% vide		·	35	Haryana PWD item	3.50	Per Joint	10	50 to 100 mm internal diameter of pipe,	
125 to 200 mm internal diameter of pipe, valve, special   300 to 375 mm internal diameter of pipe, valve, special   400 to 450 mm internal diameter of pipe, valve, special   400 to 450 mm internal diameter of pipe, valve, special   500 to 525 mm									
valve, special			41		۵ 0 2	Dor Joint			
300 to 375 mm internal diameter of pipe, valve, special   400 to 450 mm internal diameter of pipe, valve, special   500 to 525 mm internal diameter of pipe, valve, special   22.05 mm internal diameter of pipe, valve, special   7			41	amenument at 23-1-09	6.83	rer Joint	6		
valve, special									
valve, special			70		17.50	Per Joint	4	300 to 375 mm internal diameter of pipe,	
400 to 450 mm internal diameter of pipe, valve, special   500 to 525 mm internal diameter of pipe, valve, special   500 to 525 mm internal diameter of pipe, valve, special   6 Taking out dismentaled cast iron socketed or flanged pipes, valves and specials etc outside from the trenches and stacking at a nearest convenient place   80 mm.   10 m   18.20   100 mm.   10 m   22.23   22.95 mm.   10 m   22.35   22.95 mm.   10 m   22.35   200 mm.   10 m   36.23   200 mm.   10 m   36.23   200 mm.   10 m   36.23   200 mm.   10 m   57.58   200 mm.			,						
valve, special				<del> </del>	10.05				
S00 to 525 mm internal diameter of pipe, valve, special   -			-		19.95				
Valve, special   Valv									
Valve, special   Valv				[	22.05			500 to 525 mm internal diameter of pipe,	
Taking out dismentaled cast iron socketed or flanged pipes, valves and specials etc outside from the trenches and stacking at a nearest convenient place			ļ						
Ranged pipes, valves and specials etc outside from the trenches and stacking at a nearest convenient place									6
From the trenches and stacking at a nearest convenient place			-						0
So mm.   10 m   18.20   Haryana PWD item   -			ļ						
So mm.   10 m   18.20   Haryana PWD item   -								from the trenches and stacking at a nearest	
80 mm.			ļ					convenient place	
100 mm.   10 m   22.23   28.38 plus 250% vide   -			ļ					<u> </u>	
100 mm.   10 m   22.23   28.38 plus 250% vide   -				H DWD '-	10.00	10		90	
125 mm.									
150 mm.								100 mm.	
150 mm.				amendment dt 23-1-09	22.75	10 m		125 mm.	
200 mm.			-	4					
250 mm.				1					
300 mm.   10 m   57.58     -									
350 mm.									
350 mm.				[	57.58	10 m		300 mm.	
400 mm.			-			10 m		350 mm.	
450 mm.									
10 m									
Providing and fixing cast iron double flanged sluice valves PN -1.6 marked with IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge ( Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY   Panja PWD A & C   Sip No CZC-6 dated 3   36,980   150 mm i/d   1   each   5709   200 mm i/d   1   each   5709   250 mm i/d   1   each   15589   300 mm i/d   1   each   15589   300 mm i/d   1   each   15589   400 mm i/d   2   each   41120   450 mm i/d   each   48981   -									
Flanged sluice valves PN -1.6 marked with IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge ( Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY					115.33	10 m		500 mm.	
Flanged sluice valves PN -1.6 marked with IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge ( Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY	roughly at c	Quantity of valves taken ron						Providing and fixing cast iron double	7
IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge ( Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY  80 mm i/d 0 each 2573 Haryana PWD A & C - lip No CZC-6 dated 3- 36,980 150 mm i/d 1 each 5709 5,709 5,709 5,709 200 mm i/d 1 each 9945 250 mm i/d 1 each 15589 300 mm i/d 1 each 15589 300 mm i/d 1 each 18944 18,944 18,944 18,944 180 mm i/d 2 each 41120 450 mm i/d 2 each 48981									
with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge ( Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY       4 each       2573       Haryana PWD A & C       -		por reivi	ļ						
638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge ( Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY  80 mm i/d  100 mm i/d  10 each  2573  150 mm i/d  1 each  150 mm i/d  1 each  2573  150 mm i/d  1 each  2573  36980  7-09  5,709  5,709  200 mm i/d  1 each  9945  250 mm i/d  1 each  15589  300 mm i/d  1 each  18944  350 mm i/d  260 mm i/d  270 mm i/d  280 mm i			ļ						
Stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge ( Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY									
Stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge ( Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY			ļ						
in all respect to the satisfaction of engineer in charge ( Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY   80 mm i/d									
in charge ( Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY			ļ						
LEADER, SI, PANJA, UPADHAY			ļ						
80 mm i/d			ļ						
100 mm i/d			ļ					LEADEK, SI, PANJA, UPADHAY	
100 mm i/d   10 each   3698   slip No CZC-6 dated 3- 36,980     150 mm i/d   1 each   5709   7-09   5,709     200 mm i/d   1 each   9945   9,945     250 mm i/d   1 each   15589   300 mm i/d   1 each   18944     350 mm i/d   each   30395   400 mm i/d   each   41120     450 mm i/d   each   48981   -			ļ						
100 mm i/d   10 each   3698   slip No CZC-6 dated 3- 36,980     150 mm i/d   1 each   5709   7-09   5,709     200 mm i/d   1 each   9945   9,945     250 mm i/d   1 each   15589   300 mm i/d   1 each   18944     350 mm i/d   each   30395   400 mm i/d   each   41120     450 mm i/d   each   48981   -				Horrisons DWD A 6 C	2572	aa ah	^	90 mm i/d	
150 mm i/d									
200 mm i/d     1 each     9945       250 mm i/d     1 each     15589       300 mm i/d     1 each     18944       350 mm i/d     each     30395       400 mm i/d     each     41120       450 mm i/d     each     48981									
200 mm i/d     1 each     9945       250 mm i/d     1 each     15589       300 mm i/d     1 each     18944       350 mm i/d     each     30395       400 mm i/d     each     41120       450 mm i/d     each     48981			5,709	7-09	5709	each	1	150 mm i/d	
250 mm i/d 1 each 15589 300 mm i/d 1 each 18944 350 mm i/d each 30395 400 mm i/d each 41120 450 mm i/d each 48981									
300 mm i/d				4					
350 mm i/d each 30395 400 mm i/d each 41120 - 450 mm i/d each 48981 -							1		
400 mm i/d each 41120 - 450 mm i/d each 48981 -			18,944	4			1		
450 mm i/d each 48981 -			-		30395	each		350 mm i/d	
450 mm i/d each 48981 -			-	]	41120	each		400 mm i/d	
				4					
500 mm i/d				4					
500 mm i/d each 66911 -									
600 mm i/d each 95126 -					95126	each		600 mm i/d	

8	Providing and fixing cast iron single air				Haryana PWD A & C		size of air valve taken one sixth of pipe
	valves marked with IS 14845 including carriage, loading, unloading, stacking,				Slip CZC/3-7-09		dia and nomber of air valves taken at one per km
	handling, rehandling etc drilling, tapping,						•
	screwing etc in valve connections complete						
	in all respect to the satisfaction of engineer- in-charge						
	40 mm i/d	10	each	1619		16,190	
	50 mm i/d		each	1771		-	
9	Providing and fixing cast iron double air						
	valves marked with IS 14845 including						
	carriage, loading, unloading, stacking,						
	handling, rehandling etc drilling, tapping, screwing etc in valve connections complete						
	in all respect to the satisfaction of engineer-						
	in-charge						
	65 mm i/d	0	each	1883	Haryana PWD A & C	-	
	80 mm i/d		each		Slip CZC/3-7-09	-	
	100 mm i/d	0	each	2491		-	
10	Providing and fixing cast iron kinetic air valves marked with IS 14845 including						
	carriage, loading, unloading, stacking,						
	handling, rehandling etc drilling, tapping,						
	screwing etc in valve connections complete						
	in all respect to the satisfaction of engineer-						
	in-charge						
	80 mm i/d		each		Haryana PWD A & C	-	
-	100 mm i/d 150 mm i/d		each each	7514	Slip CZC/3-7-09	-	
	200 mm i/d		each	13267	}	-	
11	Sluice valve and air valve chamber:		each	5000	LS	120,000	
	Providing and constructing Brick masonry						
	valve chamber with 15 cm thick 1:3:6						
	proportion PCC bedding, excluding excavation, Brick masonry in C.M. 1:5						
	Proportion, 20 mm thick 1:4 plaster, precast						
	RCC frame and cover, etc. complete as						
	directed by Engineer-in-charge. (Wall						
	thickness: 0.23 M for depth of 1.2 M and						
	0.35 M for balance depth exceeding 1.2 M)						
12	Thrust Blocks Providing and Javing accept	69.55	oum.	2754	Harriana DWD itam	191,507	
12	<b>Thrust Block:</b> Providing and laying cement concrete in RCC (M-15, 1:2:4) with stone	09.55	cuIII	2754	Haryana PWD item 10.79 plus 340% vide	191,507	
	aggregate 20 mm nominal size for thrust				amendment 23-1-09		
	blocks including compaction, curing,						
	finishing, excluding cost of reinforcement &						
	shuttering etc., Complete as per drawings						
	and specifications and as directed by Engineer.						
13	Thrust Block: Shuttering for precast plain	278.2	Sqm	40	Haryana PWD item	11,257	
	or RC concrete wall plates, bed plates		*		9.15 plus225% vide	,,	
	shelves etc				amendment 23-1-09		
14	Providing TMT Steel Reinforcement as per	28	Quintal	4127	Haryana PWD item	114,805	
	IS: 1786 for RCC work including				18.22 plus 350% vide	,	
	straightening, cutting, bending, placing in				amendment 23-1-09		
	position and binding etc as per drawing all						
	complete including cost of binding wire, labour, wastage etc.						
15	Road Work:					666,932	
16	Mislenious Items					444,621	

### Detailed Estimate for Distribution System - Zone 5

S No	Item	Quantity	Unit	Rate	Reference for Rate	Amount	Quantity Reference/Calculations
1	Excavation for pipelines running under pressure in trenches and pits, in streets and lanes including trimming and dressing sides, levelling of beds of trenches to correct grade, cutting joint holes, cutting trees and bushes, etc. refilling consolidation and watering of refill, in 15 cm layers and restoration of unmetalled or unpaved surface to its original condition, including the cost of dewatering of rain water, diversion of traffic, night signals, fixing caution boards, crossing over trenches for access to the houses, watching, fancing etc. and disposal of surplus soil outside and inside the town, involving lead upto one km in ordinary soil (for new pipe line and replacement pipes)				Item 6.9 Haryana PWD & 300% above vide amendment dated 1.1 08 and 23.1.09		Trench Width is pipe dia plus 300 mm, Minimum earth cover of 1 meter, average earth cover of 1.15 m, Average depth of excavation is 1.15 plus pipe dia. For 110 mm pipe excavation is (1.15+.11)*(.3+.11) ie 0.5166*L where L is length of Pipe
A	Without timbering and shoring upto 1.5 metres depth	13221		4732		625,640	
В	Excavation for thrust block	163.1	CUM 100 CUM	4732		7,716	
С	With timbering and shoring upto 1.5 metres depth		100 CUM	6300		-	
D	With timbering and shoring exceeding 1.5 metres depth, but upto 2.25 metres depth		100 CUM	6492		-	
Е	With timbering and shoring exceeding 2.25 metres depth, but upto 3 metres depth		100 CUM	6992		-	
2	Supply, Laying, Jointing, Field Testing, Commissioning complete at site of HDPE (PE 80 Grade Coumpound) Pipes PN-8.0 (8.0 kg/sqcm) as per IS:4984 and specifications for water application, including all cost of material, labour required, transportation, loading, unloading & stacking etc. complete. (New Pipe Line)						Factor for Excavation Quantity
	110 mm	17494	RM	310	RA	5,428,278	0.5166
	125 mm 140 mm		RM RM	399 499	RA RA	101,368 296,382	0.5334 0.5676
	160 mm	125.5		650		81,626	0.6026
	180 mm	378.5		825	RA	312,126	0.6384
	200 mm 225 mm	171.5	RM RM	1016 1282	RA RA	174,277	0.675 0.7314
	250 mm		RM	1585		-	0.77
	280 mm		RM	1984	RA	-	0.8294
	315 mm 355 mm		RM RM	2511 3180	RA RA	-	0.8906 0.975
	400 mm		RM	4129	RA	-	1.085
	450 mm		RM	5226		-	1.2
	500 mm Sub Total	19018	RM PM	6443	RA	-	1.32
3	Supply, Laying, Jointing, Field Testing, Commissioning complete at site of HDPE (PE80 Grade Coumpound) Pipes PN-8.0 (8.0 kg/sqcm) as per IS:4984 and specifications for water application, including all cost of material, labour required, transportation, loading, unloading & stacking etc. complete. (replacement of line with a new pipeline)		-				
	110 mm		RM	310		6,206	0.5166
	125 mm	1865		399	RA	744,293	0.5334
	140 mm 160 mm	1288 839	RM RM	499 650		642,660 545,691	0.5676 0.6026
	180 mm	245.5		825	RA	202,449	0.6384
	200 mm	411	RM	1016	RA	417,655	0.675
	225 mm	19.5 713.5	RM	1282	RA PA	24,994	0.7314
	250 mm 280 mm	/13.5	RM RM	1585 1984	RA RA	1,130,969	0.77 0.8294
	315 mm	13.5	RM	2511	RA	33,900	0.8906
	355 mm		RM	3180	RA	87,448	0.975
	400 mm		RM	4129		-	1.085
	450 mm	ı	RM	5226	RA	-	1.2
	500 mm		RM	6443	RA	-	1.32

4	Dismantling pipeline of G.I./A.C./P.V.C./S.W./H.D.P.E. pipe including breaking the joints, lifting the pipes and stacking to the place as directed by Engineer-in-charge with all leads and lifts including cleaning the surface, etc. complete. (In place of dismentaled pipe another pipe is to be laid as such excavation for dismentalling is included in excavation for laying new pipe line)	5443	RM	12	LS	65,316	
	80 mm.		R.M.				
	100 mm.		R.M.			-	
	125 mm.		R.M.			-	
	150 mm. 200 mm.		R.M.			-	
	250 mm.		R.M.			-	
	300 mm.		R.M.			-	
	350 mm.		R.M.			-	
	400 mm.		R.M.			-	
	450 mm. 500 mm.		R.M. R.M.			-	
5	Dismentaling flanged joints for cast iron pipes, valves and specials including carriage of bolts, nuts and washers to store,						
	50 to 100 mm internal diameter of pipe, valve, special	10	Per	3.50	Haryana PWD item	35	
	125 to 200 mm internal diameter of pipe, valve, special	6	Joint Per Joint	6.83	28.38 plus 250% vide amendment dt 23-1-09	41	
	300 to 375 mm internal diameter of pipe, valve, special	4	Per	17.50	/	70	
	400 to 450 mm internal diameter of pipe, valve, special		Joint	19.95		-	
	500 to 525 mm internal diameter of pipe, valve, special			22.05		-	
6	Taking out dismentaled cast iron socketed or flanged pipes, valves and specials etc outside from the trenches and stacking at a nearest convenient place					-	
	80 mm.		10 m		Haryana PWD item	-	
	100 mm.		10 m	22.23		-	
	125 mm. 150 mm.		10 m	27.13	23-1-09	-	
	200 mm.		10 m	36.23		-	
	250 mm.		10 m	49.18		-	
	300 mm. 350 mm.		10 m	57.58 72.63		-	
	400 mm.		10 m	95.73		-	
	450 mm.		10 m	107.45		-	
	500 mm.		10 m	115.33		-	
7	Providing and fixing cast iron double flanged sluice valves PN -1.6 marked with IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge ( Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY						Quantity of valves taken roughly at one per KM
	80 mm i/d		each		Haryana PWD A	-	
	100 mm i/d 150 mm i/d		each each		& C slip No CZC- 6 dated 3-7-09	73,960 17,127	
	200 mm i/d		each	9945		9,945	
	250 mm i/d	1	each	15589	]	15,589	
	300 mm i/d		each	18944		18,944	
	350 mm i/d 400 mm i/d	1	each each	30395 41120	-	30,395	
	450 mm i/d		each	48981		-	
	500 mm i/d		each	66911		-	
8	600 mm i/d Providing and fixing cast iron single air valves marked with IS 14845 including carriage, loading, unloading, stacking, handling, rehandling etc drilling, tapping, screwing etc in valve connections complete in all respect to the satisfaction of engineer-in-charge		each	95126	Haryana PWD A & C Slip CZC/3-7-09	-	size of air valve taken one sixth of pipe dia and nomber of air valves taken at one per km
	40 mm i/d 50 mm i/d		each	1619 1771		38,856	

			, ,		Т		
9	Providing and fixing cast iron double air valves marked						
1	with IS 14845 including carriage, loading, unloading,						
	stacking, handling, rehandling etc drilling, tapping,						
	screwing etc in valve connections complete in all respect						
1	to the satisfaction of engineer-in-charge						
1							
	65 mm ://d	^	aaah	1002	Haryana PWD A &		
	65 mm i/d		each		-	-	
	80 mm i/d		each		C Slip CZC/3-7-09	-	
	100 mm i/d	0	each	2491		-	
10	Providing and fixing cast iron kinetic air valves marked						
	with IS 14845 including carriage, loading, unloading,						
	stacking, handling, rehandling etc drilling, tapping,						
	screwing etc in valve connections complete in all respect						
	to the satisfaction of engineer-in-charge						
	80 mm i/d	^	each	2024	Haryana PWD A &	_	
-							
	100 mm i/d		each		C Slip CZC/3-7-09	-	
	150 mm i/d		each	7514		-	
	200 mm i/d	0		13267		-	
	Sluice valve and air valve chamber: Providing and	51	each	5000	LS	255,000	
	constructing Brick masonry valve chamber with 15 cm						
	thick 1:3:6 proportion PCC bedding, excluding						
	excavation, brick masonry in C.M. 1:5 Proportion, 20						
	mm thick 1:4 plaster, precast RCC frame and cover, etc.						
	complete as directed by Engineer-in-charge. (Wall						
	thickness: 0.23 M for depth of 1.2 M and 0.35 M for						
	balance depth exceeding 1.2 M )						
	butanee depart eneceding 112 111 /						
12	Thrust Block: Providing and laying cement concrete in	163.0667	cum	2754	Haryana PWD item	449,007	
1	RCC (M-15, 1:2:4) with stone aggregate 20 mm				10.79 plus 340%		
	nominal size for thrust blocks including compaction,				vide amendment 23-		
	curing, finishing, excluding cost of reinforcement &				1-09		
	shuttering etc., Complete as per drawings and						
	specifications and as directed by Engineer.						
1							
1							
1							
		<=0.0 -</td <td></td> <td></td> <td>TT PITTE :</td> <td>24</td> <td></td>			TT PITTE :	24	
13	Thrust Block: Shuttering for precast plain or RC	652.2667	Sqm	40	Haryana PWD item	26,392	
	concrete wall plates, bed plates shelves etc				9.15 plus225%		
1					vide amendment 23-		
1					1-09		
1							
1							
14	Providing TMT Steel Reinforcement as per IS: 1786 for	65	Ouintal	4127	Haryana PWD item	269.173	
	RCC work including straightening, cutting, bending,	05	Zuman	712/	18.22 plus 350%	207,173	
	placing in position and binding etc as per drawing all				vide amendment 23-		
1					1-09		
	complete including cost of binding wire, labour, wastage				1-09		
1	etc.						
15	Road Work:					1,820,029	
16	Mislenious Items					1,213,353	
	Total					15,166,911	
						. ,,- 11	

# Detailed Estimate for Distribution System - Zone ${\bf 6}$

S No	Item	Quantity	Unit	Rate	Reference for	Amount	Quantity
5110	Tem .	Quantity	CIII	Tute	Rate	Timount	Reference/Calculations
1	Excavation for pipelines running under				Item 6.9		Trench Width is pipe dia
	pressure in trenches and pits, in streets and				Haryana PWD		plus 300 mm, Minimum
	lanes including trimming and dressing sides,				& 300% above		earth cover of 1 meter,
	levelling of beds of trenches to correct grade,				vide		average earth cover of 1.15
	cutting joint holes, cutting trees and bushes,				amendment		m, Average depth of
	etc. refilling consolidation and watering of				dated 1.1 08		excavation is 1.15 plus pipe
	refill, in 15 cm layers and restoration of				and 23.1.09		dia. For 110 mm pipe
	unmetalled or unpaved surface to its original						excavation is
	condition, including the cost of dewatering						(1.15+.11)*(.3+.11) ie
	of rain water, diversion of traffic, night						0.5166*L where L is length
	signals, fixing caution boards, crossing over						of Pipe
	trenches for access to the houses, watching,						
	fancing etc. and disposal of surplus soil						
	outside and inside the town, involving lead						
	upto one km in ordinary soil (for new pipe						
	line and replacement pipes)						
Α	Without timbering and shoring upto 1.5	14716		4732		696,377	
	metres depth		CUM				
В	Excavation for thrust block	184.4		4732		8,727	
2	Cumply Loying Lainting Ei-13 Tradian		CUM				Factor for Excavation
2	Supply, Laying, Jointing, Field Testing, Commissioning complete at site of HDPE						
	(PE 80 Grade Coumpound) Pipes PN-8.0						Quantity
	(8.0 kg/sqcm) as per IS:4984 and						
	specifications for water application,						
	including all cost of material, labour						
	required, transportation, loading, unloading						
	& stacking etc. complete. (New Pipe Line)						
	as stacking etc. complete. (New 1 spc Elite)						
	110 mm	21766	RM	310	RA	6,753,853	0.5166
	125 mm	2639		399		1,053,185	0.5334
	140 mm	693.5		499	RA	346,029	0.5676
	160 mm	493.5	RM	650	RA	320,975	0.6026
	180 mm	610	RM	825	RA	503,029	0.6384
	200 mm	209.5	RM	1016	RA	212,892	0.675
	225 mm	218.5	RM	1282	RA	280,061	0.7314
	250 mm	58	RM	1585	RA	91,936	0.77
	315 mm	121	RM	2511	RA	303,846	0.8906
	355 mm	95	RM	3180	RA	302,092	0.975
	Sub Total	26904	RM				
3	Supply, Laying, Jointing, Field Testing,						
	Commissioning complete at site of HDPE						
	(PE80 Grade Coumpound) Pipes PN-8.0 (8.0						
	kg/sqcm) as per IS:4984 and specifications						
	for water application, including all cost of						
	material, labour required, transportation,						
	loading, unloading & stacking etc. complete.						
-	(replacement of line with a new pipeline)		D) (	20-		107.05-	0 #===
	125 mm		RM	399		105,358	0.5334
	140 mm		RM	499		20,457	0.5676
	160 mm		RM RM	650	RA	295,284	0.6026
A	Sub Total  Dismontling pipeling of			10	10	0.100	
4	Dismantling pipeline of G.I./A.C./P.V.C./S.W./H.D.P.E. pipe	759	RM	12	LS	9,108	
	* *						
	including breaking the joints, lifting the pipes and stacking to the place as directed by						
	Engineer-in-charge with all leads and lifts						
	including cleaning the surface, etc. complete.						
	(In place of dismentaled pipe another pipe is						
	to be laid as such excavation for						
	dismentalling is included in excavation for						
	laying new pipe line)						
	2 6 F-F/						

S No	Item	Quantity	Unit	Rate	Reference for Rate	Amount	Quantity Reference/Calculations
5	Dismentaling flanged joints for cast iron pipes, valves and specials including carriage of bolts, nuts and washers to store,						
	50 to 100 mm internal diameter of pipe, valve, special	4	Per Joint	3.50	Haryana PWD item 28.38	14	
	125 to 200 mm internal diameter of pipe, valve, special	2		6.83	plus 250%	14	
7	Providing and fixing cast iron double flanged sluice valves PN -1.6 marked with IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge ( Makes AARKO, VENUS,				vide		Quantity of valves taken roughly at one per KM
	100 mm i/d	24	each	3698	Haryana PWD	88,752	
	150 mm i/d	1	each		A & C slip No	5,709	
	200 mm i/d		each		CZC-6 dated 3-	. ,	
	250 mm i/d	1		15589	7-09	15,589	
8	300 mm i/d Providing and fixing cast iron single air	1	each	18944	Haryana PWD	18,944	size of air valve taken one
o o	valves marked with IS 14845 including carriage, loading, unloading, stacking, handling, rehandling etc drilling, tapping, screwing etc in valve connections complete in all respect to the satisfaction of engineer-in-charge				A & C Slip CZC/3-7-09		sixth of pipe dia and nomber of air valves taken at one per km
	40 mm i/d	28	each	1619		45,332	
11	Sluice valve and air valve chamber: Providing and constructing Brick masonry valve chamber with 15 cm thick 1:3:6 proportion PCC bedding, excluding excavation, Brick masonry in C.M. 1:5 Proportion, 20 mm thick 1:4 plaster, precast RCC frame and cover, etc. complete as directed by Engineer-in-charge. (Wall thickness: 0.23 M for denth of 1.2 M and	56	each	5000	LS	280,000	
12	Thrust Block: Providing and laying cement concrete in RCC (M-15, 1:2:4) with stone aggregate 20 mm nominal size for thrust blocks including compaction, curing, finishing, excluding cost of reinforcement & shuttering etc., Complete as per drawings and specifications and as directed by	184.42	cum	2754	Haryana PWD item 10.79 plus 340% vide amendment 23- 1-09	507,804	
13	Thrust Block: Shuttering for precast plain or RC concrete wall plates, bed plates	737.68	Sqm	40	Haryana PWD item 9.15 plus225% vide	29,848	
14	Providing TMT Steel Reinforcement as per IS: 1786 for RCC work including straightening, cutting, bending, placing in position and binding etc as per drawing all complete including cost of binding wire, labour, wastage etc.  Road Work:	74	Quintal	4127	Haryana PWD item 18.22 plus 350% vide amendment 23- 1-09	304,420 1,891,437	
16	Mislenious Items					1,260,958	
	Total					15,761,978	

# Detailed Estimate for Distribution System - Zone 7

S No	Item	Quantity	Unit	Rate	Reference for Rate	Amount	Quantity Reference/Calculations
1	Excavation for pipelines running under pressure in trenches and pits, in streets and lanes including trimming and dressing sides, levelling of beds of trenches to correct grade, cutting joint holes, cutting trees and bushes, etc. refilling consolidation and watering of refill, in 15 cm layers and restoration of unmetalled or unpaved surface to its original condition, including the cost of dewatering of rain water, diversion of traffic, night signals, fixing caution boards, crossing over trenches for access to the houses, watching, fancing etc. and disposal of surplus soil outside and inside the town, involving lead upto one km in ordinary soil (for new pipe line and replacement pipes)				Item 6.9 Haryana PWD & 300% above vide amendment dated 1.1 08 and 23.1.09		Trench Width is pipe dia plus 300 mm, Minimum earth cover of 1 meter, average earth cover of 1.15 m, Average depth of excavation is 1.15 plus pipe dia. For 110 mm pipe excavation is (1.15+.11)*(.3+.11) ie 0.5166*L where L is length of Pipe
A	Without timbering and shoring upto 1.5 metres depth	13458	100 CUM	4732		636,820	
В	Excavation for thrust block	170.3	100 CUM	4732		8,060	
D	With timbering and shoring exceeding 1.5 metres depth, but upto 2.25 metres depth	3	100 CUM	6492		195	
2	Supply, Laying, Jointing, Field Testing, Commissioning complete at site of HDPE (PE 80 Grade Coumpound) Pipes PN-8.0 (8.0 kg/sqcm) as per IS:4984 and specifications for water application, including all cost of material, labour required, transportation, loading, unloading & stacking etc. complete. (New Pipe Line)						Factor for Excavation Quantity
	110 mm	10255	RM	310	RA	3,182,062	0.5166
	125 mm		RM	399	RA	94,583	0.5334
	140 mm		RM	499	RA	30,187	0.5676
	160 mm	124.5		650		80,976	0.6026
	180 mm		RM	825	RA	30,512	0.6384
	250 mm Sub Total	10741	RM PM	1585	RA	42,798	0.77
3	Supply, Laying, Jointing, Field Testing, Commissioning complete at site of HDPE (PE80 Grade Coumpound) Pipes PN-8.0 (8.0 kg/sqcm) as per IS:4984 and specifications for water application, including all cost of material, labour required, transportation, loading, unloading & stacking etc. complete. (replacement of line with a new pipeline)			210	DA	2 (05 200	0.51/6
	110 mm 125 mm	11909 1272		310 399	RA RA	3,695,288 507,636	0.5166 0.5334
	140 mm	406.5		499	RA	202,827	0.5676
	160 mm	452.5		650		294,309	0.6026
	180 mm	268	RM	825	RA	221,003	0.6384
	200 mm		RM	1016		165,639	0.675
	225 mm	184.5		1282	RA	236,482	0.7314
<u> </u>	250 mm		RM	1585	RA	54,686	0.77
	280 mm	105.5		1984		209,283	0.8294
	315 mm 355 mm		RM RM	2511 3180	RA RA	-	0.8906 0.975
	400 mm		RM RM	4129	RA RA	-	1.085
	450 mm	13	RM	5226		67,934	1.083
	500 mm		RM	6443	RA	-	1.32
	Sub Total	14809	RM				

	Dismantling pipeline of G.I./A.C./P.V.C./S.W./H.D.P.E. pipe including breaking the joints, lifting the pipes and stacking to the place as directed by Engineer-in-charge with all leads and lifts including cleaning the surface, etc. complete. (In place of dismentaled pipe another pipe is to be laid as such excavation for dismentalling is included in excavation for laying new pipe line)	14809	RM	12	LS	177,708	
	Dismentaling flanged joints for cast iron pipes, valves and specials including carriage of bolts, nuts and washers to store,						
	50 to 100 mm internal diameter of pipe, valve, special	30	Per Joint	3.50	Haryana PWD item 28.38	105	
	125 to 200 mm internal diameter of pipe, valve, special	20	Per Joint	6.83	plus 250% vide	137	
	300 to 375 mm internal diameter of pipe,	10	Per Joint	17.50	amendment dt	175	
	Providing and fixing cast iron double flanged sluice valves PN -1.6 marked with IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge ( Makes AARKO, VENUS,						Quantity of valves taken roughly at one per KM
	100 mm i/d	24	each	3698	Haryana PWD	88,752	
	150 mm i/d	1	each		A & C slip No	5,709	
	200 mm i/d	1	each		CZC-6 dated 3-	9,945	
	250 mm i/d		each	15589	7-09	15,589	
	300 mm i/d Providing and fixing cast iron single air valves marked with IS 14845 including carriage, loading, unloading, stacking, handling, rehandling etc drilling, tapping, screwing etc in valve connections complete in all respect to the satisfaction of engineer- in-charge	1	each	18944	Haryana PWD A & C Slip CZC/3-7-09	18,944	size of air valve taken one sixth of pipe dia and nomber of air valves taken at one per km
	40 mm i/d	28	each	1619		45,332	
11	Sluice valve and air valve chamber: Providing and constructing Brick masonry valve chamber with 15 cm thick 1:3:6 proportion PCC bedding, excluding excavation, Brick masonry in C.M. 1:5 Proportion, 20 mm thick 1:4 plaster, precast RCC frame and cover, etc. complete as directed by Engineer-in-charge. (Wall thickness: 0.23 M for depth of 1.2 M and 0.35 M for belance depth exceeding 1.2 M.)	56	each	5000	LS	280,000	
12	Thrust Block: Providing and laying cement concrete in RCC (M-15, 1:2:4) with stone aggregate 20 mm nominal size for thrust blocks including compaction, curing, finishing, excluding cost of reinforcement & shuttering etc., Complete as per drawings and specifications and as directed by	170.33			Haryana PWD item 10.79 plus 340% vide amendment 23- 1-09	469,007	
13	Thrust Block: Shuttering for precast plain or RC concrete wall plates, bed plates shelves etc.	681.32	Sqm	40	Haryana PWD item 9.15 plus225% vide	27,568	
	Isselves etc. Providing TMT Steel Reinforcement as per IS: 1786 for RCC work including straightening, cutting, bending, placing in position and binding etc as per drawing all complete including cost of binding wire,	68	Quintal	4127	Haryana PWD item 18.22 plus 350% vide amendment 23- 1-09	281,162	
15	labour, wastage etc.				1-09	1 677 212	
15 16	labour, wastage etc. Road Work: Mislenious Items				1-09	1,677,212 1,118,141	

### Detailed Estimate for Distribution System - Zone 8

S No	Item	Quantity	Unit	Rate	Reference for Rate	Amount	Quantity Reference/Calculations
1	Excavation for pipelines running under pressure in trenches and pits, in streets and lanes including trimming and dressing sides, levelling of beds of trenches to correct grade, cutting joint holes, cutting trees and bushes, etc. refilling consolidation and watering of refill, in 15 cm layers and restoration of unmetalled or unpaved surface to its original condition, including the cost of dewatering of rain water, diversion of traffic, night signals, fixing caution boards, crossing over trenches for access to the houses, watching, fancing etc. and disposal of surplus soil outside and inside the town, involving lead upto one km in ordinary soil (for new pipe line and replacement pipes)				Item 6.9 Haryana PWD & 300% above vide amendment dated 1.1 08 and 23.1.09		Trench Width is pipe dia plus 300 mm, Minimum earth cover of 1 meter, average earth cover of 1.15 m, Average depth of excavation is 1.15 plus pipe dia. For 110 mm pipe excavation is (1.15+.11)*(.3+.11) ie 0.5166*L where L is length of Pipe
A	Without timbering and shoring upto 1.5 metres depth	7952	100 CUM	4732		376,288	
В	Excavation for thrust block	95.1	100 CUM	4732		4,501	
С	With timbering and shoring upto 1.5 metres depth		100 CUM	6300		-	
D	With timbering and shoring exceeding 1.5 metres depth, but upto 2.25 metres depth	5	100 CUM	6492		325	
Е	With timbering and shoring exceeding 2.25 metres depth, but upto 3 metres depth		100 CUM	6992		-	
2	Supply, Laying, Jointing, Field Testing, Commissioning complete at site of HDPE (PE 80 Grade Coumpound) Pipes PN-8.0 (8.0 kg/sqcm) as per IS:4984 and specifications for water application, including all cost of material, labour required, transportation, loading, unloading & stacking etc. complete. (New Pipe Line)						Factor for Excavation Quantity
	110 mm	6523	RM	310	RA	2,024,046	0.5166
	125 mm		RM	399		150,455	0.5334
	140 mm	249.5		499		124,491	0.5676
	160 mm	843.5		650 825		548,618	0.6026
	180 mm 200 mm	120.5	RM RM	1016		122,451	0.6384 0.675
	225 mm	120.0	RM	1282		-	0.7314
	250 mm		RM	1585	RA	-	0.77
	280 mm		RM	1984		-	0.8294
	315 mm 355 mm		RM RM	2511 3180		-	0.8906 0.975
	400 mm		RM	4129		-	1.085
	450 mm		RM	5226	RA	-	1.2
	500 mm		RM	6443	RA	-	1.32
3	Sub Total Supply, Laying, Jointing, Field Testing, Commissioning complete at site of HDPE (PE80 Grade Coumpound) Pipes PN-8.0 (8.0 kg/sqcm) as per IS:4984 and specifications for water application, including all cost of material, labour required, transportation, loading, unloading & stacking etc. complete. (replacement of line with a new pipeline)	8114	INVI				
1	110 mm	1341.5	RM	310	RA	416,259	0.5166
	125 mm	1175	RM	399		468,925	0.5334
	140 mm		RM	499		229,522	
-	160 mm 180 mm	1550.5 491.5		650 825		1,008,455	
-	200 mm		RM RM	1016		405,310 696,091	0.6384
	225 mm	233.5		1282		299,287	0.7314
	250 mm	48	RM	1585	RA	76,085	0.77
<u> </u>	280 mm	142	RM	1984		281,689	0.8294
	315 mm		RM	2511		-	0.8906
	355 mm 400 mm		RM RM	3180 4129		-	0.975 1.085
	450 mm	27.5		5226		143,707	1.083
	500 mm		RM	6443		-	1.32
	Sub Total	6155	RM		1		

4 Denoming pipeline of   G13.5   PM   12   1.5   73,860								
GLIACEPYCESWHIDPE pps landsdage breaking the pints, filting the pines and stacking to the place as directed by Engineers include with a floats and filts including of discremaled pipe another pipe is to be list as such executation for faying new pipe line)	4	Dismantling pipeline of	6155	RM	12	LS	73,860	
						Ì		
						[		
Inchange with all leads and lifes including cleaning the surptice, etc. complete in place of discretated pripe another pripe is to be laid as such executions for discretating in a such execution for discretating in a such execution for laying new pipe laid.								
Inchange with all leads and lifes including cleaning the surptice, etc. complete in place of discretated pripe another pripe is to be laid as such executions for discretating in a such execution for discretating in a such execution for laying new pipe laid.		stacking to the place as directed by Engineer-						
Coloning the surface, etc. complete, the place of dismentated pipe another pipe is to be laid as such executation for dismensaling is an included in executation for laying new pipe labor								
of dismensiated pripe another pripes to be laid as such exercation for dissentialing is included in exercation for laying new pipe line)  80 mm. R.M						Ì		
as such exeavation for flaving new pipe line?  50 mm. R.M						İ		
Included in exavoration for laying new pipe line		of dismentaled pipe another pipe is to be laid						
Included in exavoration for laying new pipe line		as such excavation for dismentalling is						
No mm.   R. M.						İ		
S0 mm						Ì		
125 mm.		line)						
125 mm.								
125 mm.								
150 mm.   R.M.		80 mm.		R.M.			-	
150 mm.   R.M.		100 mm.		R.M.			_	
150 mm								
250 mm.   R.M.							-	
Som m.   R.M.   -		150 mm.		R.M.			-	
Som m.   R.M.   -		200 mm.		R.M.			-	
350 mm.								
350 mm								
450 mm.   R.M.   -		300 mm.		R.M.			-	
450 mm.   R.M.   -		350 mm.	-	R.M.			-	
500 mm.   R.M.								
500 mm   S.   Dimembling flanged joints for cast iron pipes, valves and specials including carriage of boils, nuts and washers to store.						1		
So   Dismentaling flanged joints for east iron pipes, valve, and specials including earring of boils, nuts and washers to store, special   10   Per Joint   3.50   Haryana PWD   35   125 to 200 mm internal diameter of pipe, valve, special   125 to 200 mm internal diameter of pipe, valve, special   10   Per Joint   17:50   109   70   100							-	
So   Dismentaling flanged joints for east iron pipes, valve, and specials including earring of boils, nuts and washers to store, special   10   Per Joint   3.50   Haryana PWD   35   125 to 200 mm internal diameter of pipe, valve, special   125 to 200 mm internal diameter of pipe, valve, special   10   Per Joint   17:50   109   70   100		500 mm.		R.M.			-	
valves and specials including carriage of bolts, unus and washers to store,	-5							
must and washers to store,   10   Per Joint   3.50   Haryana PWD   3.51   min 28.58 plus   3.51   min 28.58 plus   3.52   min internal diameter of pipe, valve, special   3.50    J					Ì			
So to 100 mm internal diameter of pipe, valve, special   10   Per Joint   3.50   Haryana PWD   125 to 200 mm internal diameter of pipe, valve, special   24   Per Joint   17.50   1-09   70   70   70   70   70   70   70						Ì		
So to 100 mm internal diameter of pipe, valve, special   10   Per Joint   3.50   Haryana PWD   125 to 200 mm internal diameter of pipe, valve, special   24   Per Joint   17.50   1-09   70   70   70   70   70   70   70		nuts and washers to store,				Ì		
Special		"				Ì		
Special								
Special		50 to 100 mm internal diameter of pipe, valve,	10	Per Joint	3.50	Haryana PWD	35	
125 to 200 mm internal diameter of pipe, valve, special   4   Per Joint   17.50   1-09   70								
valve, special		-	-	D 7 1 1			**	
17.50   1-09   70   1-09   70   1-09   70   1-09   70   1-09   70   1-09   70   1-09			6	Per Joint	6.83		41	
300 to 375 mm internal diameter of pipe, valve, special   17.50   1-09   70		valve, special						
valve, special   19.95   19.		200 to 275 mm internal diameter of nine	- 1	Por Joint	17.50	1-09	70	
401 to 450 mm internal diameter of pipe, valve, special   22.05   -			4	r er joint	17.50	1	/0	
valve, special		valve, special						
valve, special		400 to 450 mm internal diameter of pine			19.95	1	-	
Solve 525 mm internal diameter of pipe, valve, special   Common time of the common time					17.75	İ		
valve, special						4		
valve, special		500 to 525 mm internal diameter of pipe,			22.05	İ	-	
10 m						Ì		
Ranged pipes, valves and specials etc outside from the trenches and stacking at a nearest convenient place	-					1		
So mm						İ	-	
So mm		flanged pipes, valves and specials etc outside				İ		
So mm.   10 m   18.20   Haryana PWD   -						İ		
No mm   No m						Ì		
100 mm.   10 m   22.23   150 mm.   10 m   27.13		convenient place				Ì		
100 mm.   10 m   22.23   150 mm.   10 m   27.13						İ		
100 mm.   10 m   22.23   150 mm.   10 m   27.13		80 mm.		10 m	18.20	Harvana PWD	-	
125 mm.   10 m   22.75   250% vide   -								
150 mm.   10 m   27.13   amendment dt 23-   -		TOO HIIII.		LILL TIL		itam 28 20 ml		
200 mm.   10 m   36.23   250 mm.   10 m   49.18   -				-		1		
200 mm.   10 m   36.23   250 mm.   10 m   49.18   -		125 mm.		-		1		
250 mm.   10 m   49.18   300 mm.   10 m   57.58   -				10 m	22.75	250% vide	-	
300 mm.		150 mm.		10 m 10 m	22.75 27.13	250% vide amendment dt 23-	-	
300 mm.		150 mm. 200 mm.		10 m 10 m 10 m	22.75 27.13 36.23	250% vide amendment dt 23- 1-09	-	
350 mm.		150 mm. 200 mm.		10 m 10 m 10 m	22.75 27.13 36.23	250% vide amendment dt 23- 1-09		
400 mm.		150 mm. 200 mm. 250 mm.		10 m 10 m 10 m 10 m	22.75 27.13 36.23 49.18	250% vide amendment dt 23- 1-09		
450 mm.		150 mm. 200 mm. 250 mm. 300 mm.		10 m 10 m 10 m 10 m 10 m	22.75 27.13 36.23 49.18 57.58	250% vide amendment dt 23- 1-09	- - - -	
450 mm.		150 mm. 200 mm. 250 mm. 300 mm. 350 mm.		10 m 10 m 10 m 10 m 10 m	22.75 27.13 36.23 49.18 57.58 72.63	250% vide amendment dt 23- 1-09	- - - -	
500 mm.		150 mm. 200 mm. 250 mm. 300 mm. 350 mm.		10 m 10 m 10 m 10 m 10 m	22.75 27.13 36.23 49.18 57.58 72.63	250% vide amendment dt 23- 1-09	-	
Providing and fixing cast iron double flanged sluice valves PN -1.6 marked with IS 14846 including nuts and bolts marked with IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge ( Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY		150 mm. 200 mm. 250 mm. 300 mm. 350 mm. 400 mm.		10 m 10 m 10 m 10 m 10 m 10 m	22.75 27.13 36.23 49.18 57.58 72.63 95.73	250% vide amendment dt 23- 1-09		
Sluice valves PN - 1.6 marked with IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge (Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY		150 mm. 200 mm. 250 mm. 300 mm. 350 mm. 400 mm. 450 mm.		10 m 10 m 10 m 10 m 10 m 10 m 10 m	22.75 27.13 36.23 49.18 57.58 72.63 95.73	250% vide amendment dt 23- 1-09		
Sluice valves PN - 1.6 marked with IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge (Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY		150 mm. 200 mm. 250 mm. 300 mm. 310 mm. 4400 mm. 450 mm.		10 m 10 m 10 m 10 m 10 m 10 m 10 m	22.75 27.13 36.23 49.18 57.58 72.63 95.73	250% vide amendment dt 23- 1-09		
including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge (Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY   80 mm i/d  9 each  3698 & C slip No CZC-  33,282  150 mm i/d  2 each  9945  250 mm i/d  1 each  18944  350 mm i/d  2 each  300 mm i/d  2 each  300 mm i/d  2 each  400 mm i/d  2 each  450 mm i/d  2 each  450 mm i/d  2 each  48,981  500 mm i/d  2 each  48,981	7	150 mm. 200 mm. 250 mm. 300 mm. 310 mm. 4400 mm. 450 mm.		10 m 10 m 10 m 10 m 10 m 10 m 10 m	22.75 27.13 36.23 49.18 57.58 72.63 95.73	250% vide amendment dt 23- 1-09		Quantity of valves taken roughly at
rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge (Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY  80 mm i/d		150 mm. 200 mm. 250 mm. 300 mm. 350 mm. 400 mm. 450 mm. 470 mm. Froviding and fixing cast iron double flanged		10 m 10 m 10 m 10 m 10 m 10 m 10 m	22.75 27.13 36.23 49.18 57.58 72.63 95.73	250% vide amendment dt 23- 1-09		
loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge ( Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY		150 mm. 200 mm. 250 mm. 350 mm. 300 mm. 400 mm. 400 mm. 450 mm. Providing and fixing cast iron double flanged sluice valves PN -1.6 marked with IS 14846		10 m 10 m 10 m 10 m 10 m 10 m 10 m	22.75 27.13 36.23 49.18 57.58 72.63 95.73	250% vide amendment dt 23- 1-09		
rehandling etc complete in all respect to the satisfaction of engineer in charge (Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY  80 mm i/d 0 each 2573 Haryana PWD A - 2 (Sip No CZC-2		150 mm. 200 mm. 250 mm. 350 mm. 350 mm. 400 mm. 450 mm. Providing and fixing cast iron double flanged sluice valves PN -1.6 marked with IS 14846 including nuts and bolts marked with IS 1363,		10 m 10 m 10 m 10 m 10 m 10 m 10 m	22.75 27.13 36.23 49.18 57.58 72.63 95.73	250% vide amendment dt 23- 1-09		
rehandling etc complete in all respect to the satisfaction of engineer in charge (Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY  80 mm i/d 0 each 2573 Haryana PWD A - 2 (Sip No CZC-2		150 mm. 200 mm. 250 mm. 350 mm. 350 mm. 400 mm. 450 mm. Providing and fixing cast iron double flanged sluice valves PN -1.6 marked with IS 14846 including nuts and bolts marked with IS 1363,		10 m 10 m 10 m 10 m 10 m 10 m 10 m	22.75 27.13 36.23 49.18 57.58 72.63 95.73	250% vide amendment dt 23- 1-09		
80 mm i/d     0 each     2573     Haryana PWD A     -       100 mm i/d     9 each     3698     & C slip No CZC-     33,282       150 mm i/d     3 each     5709     6 dated 3-7-09     17,127       200 mm i/d     1 each     15589       300 mm i/d     1 each     18944       350 mm i/d     each     30395       400 mm i/d     each     41120       450 mm i/d     1 each     48981       500 mm i/d     each     66911		150 mm. 200 mm. 250 mm. 300 mm. 300 mm. 450 mm. 4400 mm. 450 mm. Froviding and fixing cast iron double flanged sluice valves PN -1.6 marked with IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage,		10 m 10 m 10 m 10 m 10 m 10 m 10 m	22.75 27.13 36.23 49.18 57.58 72.63 95.73	250% vide amendment dt 23- 1-09		
AARKO, VENUS, LEADER, SI, PANJA, UPADHAY  80 mm i/d  100 mm i/d  9 each 3698 8 C slip No CZC- 33,282  150 mm i/d  2 each 9945 250 mm i/d  1 each 15589 300 mm i/d 1 each 15589 300 mm i/d 2 each 30395 400 mm i/d 2 each 450 mm i/d 1 each 450 mm i/d 1 each 450 mm i/d 1 each 48,981 500 mm i/d 2 each 66911		150 mm. 200 mm. 250 mm. 300 mm. 300 mm. 450 mm. 400 mm. 450 mm. Froviding and fixing cast iron double flanged sluice valves PN -1.6 marked with IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling,		10 m 10 m 10 m 10 m 10 m 10 m 10 m	22.75 27.13 36.23 49.18 57.58 72.63 95.73	250% vide amendment dt 23- 1-09		
B0 mm i/d   0 each   2573   Haryana PWD A   -		150 mm. 200 mm. 250 mm. 350 mm. 3300 mm. 350 mm. 400 mm. 450 mm. 500 mm. Providing and fixing cast iron double flanged sluice valves PN -1.6 marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the		10 m 10 m 10 m 10 m 10 m 10 m 10 m	22.75 27.13 36.23 49.18 57.58 72.63 95.73	250% vide amendment dt 23- 1-09		
B0 mm i/d   0 each   2573   Haryana PWD A   -		150 mm. 200 mm. 250 mm. 350 mm. 350 mm. 400 mm. 450 mm. Froviding and fixing cast iron double flanged sluice valves PN -1.6 marked with IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge (Makes		10 m 10 m 10 m 10 m 10 m 10 m 10 m	22.75 27.13 36.23 49.18 57.58 72.63 95.73	250% vide amendment dt 23- 1-09		
80 mm i/d		150 mm. 200 mm. 250 mm. 350 mm. 350 mm. 400 mm. 450 mm. Froviding and fixing cast iron double flanged sluice valves PN -1.6 marked with IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge (Makes		10 m 10 m 10 m 10 m 10 m 10 m 10 m	22.75 27.13 36.23 49.18 57.58 72.63 95.73	250% vide amendment dt 23- 1-09		
100 mm i/d     9 each     3698     & C slip No CZC-       150 mm i/d     3 each     5709     6 dated 3-7-09     17,127       200 mm i/d     2 each     9945     19,890       250 mm i/d     1 each     18944       350 mm i/d     each     30395       400 mm i/d     each     41120       450 mm i/d     1 each     48981       500 mm i/d     each     66911		150 mm. 200 mm. 250 mm. 350 mm. 350 mm. 4400 mm. 450 mm. 450 mm. Froviding and fixing cast iron double flanged sluice valves PN -1.6 marked with IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge (Makes AARKO, VENUS, LEADER, SI, PANJA,		10 m 10 m 10 m 10 m 10 m 10 m 10 m	22.75 27.13 36.23 49.18 57.58 72.63 95.73	250% vide amendment dt 23- 1-09		
100 mm i/d     9 each     3698     & C slip No CZC-       150 mm i/d     3 each     5709     6 dated 3-7-09     17,127       200 mm i/d     2 each     9945     19,890       250 mm i/d     1 each     18944       350 mm i/d     each     30395       400 mm i/d     each     41120       450 mm i/d     1 each     48981       500 mm i/d     each     66911		150 mm. 200 mm. 250 mm. 350 mm. 350 mm. 4400 mm. 450 mm. 450 mm. Froviding and fixing cast iron double flanged sluice valves PN -1.6 marked with IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge (Makes AARKO, VENUS, LEADER, SI, PANJA,		10 m 10 m 10 m 10 m 10 m 10 m 10 m	22.75 27.13 36.23 49.18 57.58 72.63 95.73	250% vide amendment dt 23- 1-09		
100 mm i/d     9 each     3698     & C slip No CZC-       150 mm i/d     3 each     5709     6 dated 3-7-09     17,127       200 mm i/d     2 each     9945     19,890       250 mm i/d     1 each     18944       350 mm i/d     each     30395       400 mm i/d     each     41120       450 mm i/d     1 each     48981       500 mm i/d     each     66911		150 mm. 200 mm. 250 mm. 350 mm. 350 mm. 4400 mm. 450 mm. 450 mm. Froviding and fixing cast iron double flanged sluice valves PN -1.6 marked with IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge (Makes AARKO, VENUS, LEADER, SI, PANJA,		10 m 10 m 10 m 10 m 10 m 10 m 10 m	22.75 27.13 36.23 49.18 57.58 72.63 95.73	250% vide amendment dt 23- 1-09		
150 mm i/d     3 each     5709     6 dated 3-7-09     17,127       200 mm i/d     2 each     9945     19,890       250 mm i/d     1 each     15589     15,589       300 mm i/d     each     18944       350 mm i/d     each     30395       400 mm i/d     each     41120       450 mm i/d     1 each     48981       500 mm i/d     each     66911		150 mm. 200 mm. 250 mm. 350 mm. 350 mm. 4400 mm. 450 mm. 450 mm. Providing and fixing cast iron double flanged sluice valves PN -1.6 marked with IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge ( Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY	0	10 m 10 m 10 m 10 m 10 m 10 m 10 m 10 m	22.75 27.13 36.23 49.18 57.58 72.63 95.73 107.45 115.33	250% vide amendment dt 23- 1-09		
200 mm i/d     2 each     9945     19,890       250 mm i/d     1 each     15589     15,589       300 mm i/d     1 each     18944     18,944       350 mm i/d     each     30395     -       400 mm i/d     each     41120     -       450 mm i/d     1 each     48981     48,981       500 mm i/d     each     66911     -		150 mm. 200 mm. 250 mm. 300 mm. 300 mm. 350 mm. 4400 mm. 450 mm. 500 mm. Providing and fixing cast iron double flanged sluice valves PN -1.6 marked with IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge ( Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY		10 m 10 m 10 m 10 m 10 m 10 m 10 m 10 m	22.75 27.13 36.23 49.18 57.58 72.63 95.73 107.45 115.33	250% vide amendment dt 23- 1-09 Haryana PWD A	-	
200 mm i/d     2 each     9945     19,890       250 mm i/d     1 each     15589     15,589       300 mm i/d     1 each     18944     18,944       350 mm i/d     each     30395     -       400 mm i/d     each     41120     -       450 mm i/d     1 each     48981     48,981       500 mm i/d     each     66911     -		150 mm. 200 mm. 250 mm. 350 mm. 350 mm. 350 mm. 400 mm. 450 mm. 500 mm. Providing and fixing cast iron double flanged sluice valves PN -1.6 marked with IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge ( Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY  80 mm i/d 100 mm i/d		10 m 10 m 10 m 10 m 10 m 10 m 10 m 10 m	22.75 27.13 36.23 49.18 57.58 72.63 95.73 107.45 115.33	250% vide amendment dt 23- 1-09 Haryana PWD A & C slip No CZC-	-	
250 mm i/d 1 each 15589 300 mm i/d 1 each 18944 350 mm i/d each 30395 400 mm i/d each 41120 450 mm i/d 1 each 48981 500 mm i/d each 66911 -		150 mm. 200 mm. 250 mm. 350 mm. 350 mm. 350 mm. 400 mm. 450 mm. 500 mm. Providing and fixing cast iron double flanged sluice valves PN -1.6 marked with IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge ( Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY  80 mm i/d 100 mm i/d	9	10 m 10 m 10 m 10 m 10 m 10 m 10 m 10 m 10 m 10 m 10 m	22.75 27.13 36.23 49.18 57.58 72.63 95.73 107.45 115.33	250% vide amendment dt 23- 1-09 Haryana PWD A & C slip No CZC-		
300 mm i/d     1 each     18944       350 mm i/d     each     30395       400 mm i/d     each     41120       450 mm i/d     1 each     48981       500 mm i/d     each     66911		150 mm. 200 mm. 250 mm. 350 mm. 350 mm. 400 mm. 450 mm. 450 mm. 500 mm. Providing and fixing cast iron double flanged sluice valves PN -1.6 marked with IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge ( Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY  80 mm i/d 100 mm i/d 100 mm i/d	9	10 m 10 m 10 m 10 m 10 m 10 m 10 m 10 m 10 m 10 m	22.75 27.13 36.23 49.18 57.58 72.63 95.73 107.45 115.33	250% vide amendment dt 23- 1-09 Haryana PWD A & C slip No CZC- 6 dated 3-7-09	- - - - - - - - - - 33,282	
350 mm i/d		150 mm. 200 mm. 250 mm. 350 mm. 350 mm. 400 mm. 450 mm. 450 mm. Froviding and fixing cast iron double flanged sluice valves PN -1.6 marked with IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge (Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY  80 mm i/d 100 mm i/d 150 mm i/d 200 mm i/d	9 3 2	10 m 10 m 10 m 10 m 10 m 10 m 10 m 10 m 10 m 10 m	22.75 27.13 36.23 49.18 57.58 72.63 95.73 107.45 115.33 2573 3698 5709 9945	250% vide amendment dt 23- 1-09  Haryana PWD A & C slip No CZC- 6 dated 3-7-09	33,282 17,127 19,890	
350 mm i/d		150 mm. 200 mm. 250 mm. 350 mm. 350 mm. 4400 mm. 450 mm. 450 mm. Froviding and fixing cast iron double flanged sluice valves PN -1.6 marked with IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge (Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY  80 mm i/d 100 mm i/d 150 mm i/d 200 mm i/d 250 mm i/d	9 3 2	10 m 10 m 10 m 10 m 10 m 10 m 10 m 10 m	22.75 27.13 36.23 49.18 57.58 72.63 95.73 107.45 115.33 2573 3698 5709 9945	250% vide amendment dt 23- 1-09  Haryana PWD A & C slip No CZC- 6 dated 3-7-09	- - - - - - - - - - - - - - - - - - -	
400 mm i/d each 41120		150 mm. 200 mm. 250 mm. 350 mm. 350 mm. 4400 mm. 450 mm. 450 mm. Froviding and fixing cast iron double flanged sluice valves PN -1.6 marked with IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge (Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY  80 mm i/d 100 mm i/d 150 mm i/d 200 mm i/d 250 mm i/d	9 3 2 1	10 m 10 m 10 m 10 m 10 m 10 m 10 m 10 m	22.75 27.13 36.23 49.18 57.58 72.63 95.73 107.45 115.33 2573 3698 5709 9945	250% vide amendment dt 23- 1-09  Haryana PWD A & C slip No CZC- 6 dated 3-7-09	- - - - - - - - - - - - - - - - - - -	
450 mm i/d 1 each 48981 48,981 500 mm i/d each 66911 -		150 mm. 200 mm. 250 mm. 350 mm. 350 mm. 350 mm. 400 mm. 450 mm. 500 mm. Providing and fixing cast iron double flanged sluice valves PN -1.6 marked with IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge ( Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY  80 mm i/d 100 mm i/d 150 mm i/d 200 mm i/d 200 mm i/d 200 mm i/d 200 mm i/d	9 3 2 1	10 m 10 m 10 m 10 m 10 m 10 m 10 m 10 m	22.75 27.13 36.23 49.18 57.58 72.63 95.73 107.45 115.33 2573 3698 5709 9945 15589	250% vide amendment dt 23- 1-09  Haryana PWD A & C slip No CZC- 6 dated 3-7-09	- - - - - - - - - - - - - - - - - - -	
500 mm i/d each 66911 -		150 mm. 200 mm. 250 mm. 350 mm. 350 mm. 350 mm. 400 mm. 450 mm. 450 mm. Froviding and fixing cast iron double flanged sluice valves PN -1.6 marked with IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge ( Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY  80 mm i/d 100 mm i/d 150 mm i/d 200 mm i/d 200 mm i/d 200 mm i/d 300 mm i/d 300 mm i/d 350 mm i/d	9 3 2 1	10 m 10 m 10 m 10 m 10 m 10 m 10 m 10 m	22.75 27.13 36.23 49.18 57.58 72.63 95.73 107.45 115.33  22573 3698 5709 9945 15589 18944 30395	250% vide amendment dt 23- 1-09  Haryana PWD A & C slip No CZC- 6 dated 3-7-09	33,282 17,127 19,890 15,589	
500 mm i/d each 66911 -		150 mm. 200 mm. 250 mm. 350 mm. 350 mm. 400 mm. 450 mm. 450 mm. 450 mm. 500 mm. Providing and fixing cast iron double flanged sluice valves PN -1.6 marked with IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge ( Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY  80 mm i/d 100 mm i/d 150 mm i/d 200 mm i/d 200 mm i/d 300 mm i/d 300 mm i/d 350 mm i/d 400 mm i/d	9 3 2 1	10 m 10 m 10 m 10 m 10 m 10 m 10 m 10 m	22.75 27.13 36.23 49.18 57.58 72.63 95.73 107.45 115.33 2573 3698 5709 9945 15589 18944 30395 41120	250% vide amendment dt 23- 1-09  Haryana PWD A & C slip No CZC- 6 dated 3-7-09	33,282 17,127 19,890 15,589	
		150 mm. 200 mm. 250 mm. 350 mm. 350 mm. 400 mm. 450 mm. 450 mm. 450 mm. 500 mm. Providing and fixing cast iron double flanged sluice valves PN -1.6 marked with IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge ( Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY  80 mm i/d 100 mm i/d 150 mm i/d 200 mm i/d 200 mm i/d 300 mm i/d 300 mm i/d 350 mm i/d 400 mm i/d	9 3 2 1	10 m 10 m 10 m 10 m 10 m 10 m 10 m 10 m	22.75 27.13 36.23 49.18 57.58 72.63 95.73 107.45 115.33 2573 3698 5709 9945 15589 18944 30395 41120	250% vide amendment dt 23- 1-09  Haryana PWD A & C slip No CZC- 6 dated 3-7-09	33,282 17,127 19,890 15,589	
		150 mm. 200 mm. 250 mm. 350 mm. 350 mm. 400 mm. 450 mm. 450 mm. 450 mm. Froviding and fixing cast iron double flanged sluice valves PN -1.6 marked with IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge (Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY  80 mm i/d 150 mm i/d 250 mm i/d 350 mm i/d 400 mm i/d 400 mm i/d 450 mm i/d 450 mm i/d	9 3 2 1	10 m 10 m 10 m 10 m 10 m 10 m 10 m 10 m	22.75 27.13 36.23 49.118 57.58 72.63 95.73 107.45 115.33 2573 3698 5709 9945 15589 18944 30395 41120	250% vide amendment dt 23- 1-09  Haryana PWD A & C slip No CZC- 6 dated 3-7-09		
		150 mm. 200 mm. 250 mm. 350 mm. 350 mm. 400 mm. 450 mm. 450 mm. 450 mm. Froviding and fixing cast iron double flanged sluice valves PN -1.6 marked with IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge (Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY  80 mm i/d 100 mm i/d 150 mm i/d 250 mm i/d 300 mm i/d 350 mm i/d 400 mm i/d 450 mm i/d 450 mm i/d 450 mm i/d	9 3 2 1	10 m 10 m 10 m 10 m 10 m 10 m 10 m 10 m	22.75 27.13 36.23 49.18 57.58 72.63 95.73 107.45 115.33  22.73 3698 5709 9945 15589 18944 30395 41120 48981 66911	250% vide amendment dt 23- 1-09  Haryana PWD A & C slip No CZC- 6 dated 3-7-09		

-	D :1: 16: 1 . 1		I	1	II DIVID A		
8	Providing and fixing cast iron single air valves				Haryana PWD A		size of air valve taken one sixth of
	marked with IS 14845 including carriage,				& C Slip CZC/3-7-		pipe dia and nomber of air valves
	loading, unloading, stacking, handling,				09		taken at one per km
	rehandling etc drilling, tapping, screwing etc						
	in valve connections complete in all respect to						
1	the satisfaction of engineer-in-charge						
1							
	40 mm i/d	1.4	each	1619		22,666	
	50 mm i/d		each	1771		22,000	
-		U	eacii	1//1			
9	Providing and fixing cast iron double air						
	valves marked with IS 14845 including						
	carriage, loading, unloading, stacking,						
	handling, rehandling etc drilling, tapping,						
	screwing etc in valve connections complete in						
	all respect to the satisfaction of engineer-in-						
	charge						
	65 mm i/d	0	each	1883	Haryana PWD A	_	
	80 mm i/d	0			& C Slip CZC/3-7-		
<b>-</b>							
	100 mm i/d	0	each	2491	UZ	-	
10	Providing and fixing cast iron kinetic air						
1	valves marked with IS 14845 including						
	carriage, loading, unloading, stacking,						
1	handling, rehandling etc drilling, tapping,						
1	screwing etc in valve connections complete in						
1	all respect to the satisfaction of engineer-in-						
1	charge						
-	-		anah	2024	Howson's DWD 4		
<u> </u>	80 mm i/d		each		Haryana PWD A	-	
<u></u>	100 mm i/d		each		& C Slip CZC/3-7-	-	
	150 mm i/d		each	7514	09	-	
<u></u>	200 mm i/d		each	13267		-	
11	Sluice valve and air valve chamber:	31	each	5000	LS	155,000	
	Providing and constructing Brick masonry						
	valve chamber with 15 cm thick 1:3:6						
	proportion PCC bedding, excluding						
	excavation, Brick masonry in C.M. 1:5						
	Proportion, 20 mm thick 1:4 plaster, precast						
	RCC frame and cover, etc. complete as						
	directed by Engineer-in-charge. (Wall						
	thickness: 0.23 M for depth of 1.2 M and 0.35						
1	M for balance depth exceeding 1.2 M)						
1							
12	Thrust Block: Providing and laying cement	95.12	cum	2754	Haryana PWD	261,915	
12	concrete in RCC (M-15, 1:2:4) with stone	75.12		2134	item 10.79 plus	201,913	
1					340% vide		
l	aggregate 20 mm nominal size for thrust						
1	blocks including compaction, curing,				amendment 23-1-		
1	finishing, excluding cost of reinforcement &				09		
1	shuttering etc., Complete as per drawings and						
1	specifications and as directed by Engineer.						
1							
1							
12	Thurst Pleals Chuttoric - f t -1.	200.40	Cam	40	Howana Dura	15 205	
13	Thrust Block: Shuttering for precast plain or	380.48	sqm	40	Haryana PWD	15,395	
	RC concrete wall plates, bed plates shelves etc				item 9.15		
					plus225% vide		
					amendment 23-1-		
1					09		
1							
1							
14	Providing TMT Steel Rainforcement as non IS.	20	Quintal	4127	Haryana PWD	157,014	
14	Providing TMT Steel Reinforcement as per IS:	38	Quintal	4127		157,014	
1	1786 for RCC work including straightening,				item 18.22 plus		
1	cutting, bending, placing in position and				350% vide		
	binding etc as per drawing all complete				amendment 23-1-		
	including cost of binding wire, labour, wastage				09		
1	etc.						
15	Road Work:					1,232,447	
16	Mislenious Items			1		821,631	
10							
L	Total			1		10,270,389	

# $\ \, \textbf{Detailed Estimate for Distribution System - Zone 9} \\$

S No	Item	Quantity	Unit	Rate	Reference for	Amount	Quantity
1	Excavation for pipelines running under pressure in trenches and pits, in streets and				Rate Item 6.9 Haryana PWD		Reference/Calculations Trench Width is pipe dia plus 300 mm, Minimum earth
	lanes including trimming and dressing sides,				& 300% above		cover of 1 meter, average earth
	levelling of beds of trenches to correct grade,				vide		cover of 1.15 m, Average
	cutting joint holes, cutting trees and bushes,				amendment		depth of excavation is 1.15
	etc. refilling consolidation and watering of				dated 1.1 08		plus pipe dia. For 110 mm
	refill, in 15 cm layers and restoration of				and 23.1.09		pipe excavation is
	unmetalled or unpaved surface to its original						(1.15+.11)*(.3+.11) ie
	condition, including the cost of dewatering						0.5166*L where L is length of
	of rain water, diversion of traffic, night signals, fixing caution boards, crossing over						Pipe
	trenches for access to the houses, watching,						
	fancing etc. and disposal of surplus soil						
	outside and inside the town, involving lead						
	upto one km in ordinary soil (for new pipe						
	line and replacement pipes)						
A	Without timbering and shoring upto 1.5	13458		4732		636,820	
	metres depth	4.0-	CUM				
В	Excavation for thrust block	170.3	100 CUM	4732		8,060	
С	With timbering and shoring upto 1.5 metres depth		100 CUM	6300		-	
D	With timbering and shoring exceeding 1.5 metres depth, but upto 2.25 metres depth	3	100 CUM	6492		195	
Е	With timbering and shoring exceeding 2.25		100	6992		_	
	metres depth, but upto 3 metres depth		CUM				
2	Supply, Laying, Jointing, Field Testing,						Factor for Excavation Quantity
	Commissioning complete at site of HDPE (PE 80 Grade Coumpound) Pipes PN-8.0						
	(8.0 kg/sqcm) as per IS:4984 and						
	specifications for water application,						
	including all cost of material, labour						
	required, transportation, loading, unloading						
	& stacking etc. complete. (New Pipe Line)						
	110 mm	10255		310	RA	3,182,062	0.5166
	125 mm		RM	399	RA	94,583	0.5334
	140 mm		RM	499	RA	30,187	0.5676
	160 mm 180 mm	124.5	RM	650 825	RA RA	80,976 30,512	0.6026 0.6384
	200 mm	31	RM	1016		50,512	0.675
	225 mm		RM	1282	RA	-	0.7314
	250 mm	27	RM	1585	RA	42,798	0.77
	280 mm		RM	1984	RA	-	0.8294
	315 mm		RM	2511	RA	-	0.8906
	355 mm		RM	3180	RA	-	0.975
	400 mm		RM	4129	RA	-	1.085
	450 mm		RM	5226		-	1.2
	500 mm Sub Total	10741	RM RM	6443	RA	-	1.32
3	Supply, Laying, Jointing, Field Testing,	10/41	IXIVI				
3	Commissioning complete at site of HDPE (PE80 Grade Coumpound) Pipes PN-8.0 (8.0						
	kg/sqcm) as per IS:4984 and specifications						
	for water application, including all cost of						
	material, labour required, transportation,						
	loading, unloading & stacking etc. complete.						
	(replacement of line with a new pipeline)						
	110 mm	11909	RM	310	RA	3,695,288	0.5166

	T		1	1	T		
	125 mm	1272		399	RA	507,636	0.5334
	140 mm	406.5	RM	499	RA	202,827	0.5676
	160 mm	452.5	RM	650	RA	294,309	0.6026
	180 mm	268	RM	825	RA	221,003	0.6384
	200 mm	163	RM	1016	RA	165,639	0.675
	225 mm	184.5	RM	1282	RA	236,482	0.7314
	250 mm		RM	1585	RA	54,686	0.77
	280 mm	105.5		1984	RA	209,283	0.8294
	315 mm	105.5	RM	2511	RA	-	0.8906
	355 mm		RM	3180	RA		0.975
	***					-	
	400 mm	- 10	RM	4129		-	1.085
	450 mm	13	RM	5226		67,934	1.2
	500 mm		RM	6443	RA	1	1.32
	Sub Total	14809	RM				
4	Dismantling pipeline of G.I./A.C./P.V.C./S.W./H.D.P.E. pipe including breaking the joints, lifting the pipes and stacking to the place as directed by Engineer-in-charge with all leads and lifts including cleaning the surface, etc. complete. (In place of dismentaled pipe another pipe is to be laid as such excavation for dismentalling is included in excavation for laying new pipe line)	14809	RM	12	LS	177,708	
	80 mm.		R.M.			-	
	100 mm.		R.M.			-	
	125 mm.		R.M.			_	
	150 mm.		R.M.			_	
	200 mm.		R.M.			-	
	250 mm.		R.M.			-	
	300 mm.		R.M.			-	
	350 mm.		R.M.			-	
	400 mm.		R.M.			-	
	450 mm.		R.M.			-	
5	500 mm.  Dismentaling flanged joints for cast iron pipes, valves and specials including carriage of bolts, nuts and washers to store,		R.M.			-	
	50 to 100 mm internal diameter of pipe, valve, special	30	Per Joint	3.50	Haryana PWD item 28.38	105	
	125 to 200 mm internal diameter of pipe, valve, special	20	Per Joint		plus 250% vide	137	
	300 to 375 mm internal diameter of pipe, valve, special	10	Per Joint	17.50	amendment dt 23-1-09	175	
	400 to 450 mm internal diameter of pipe, valve, special			19.95		-	
	500 to 525 mm internal diameter of pipe, valve, special			22.05		-	
6	Taking out dismentaled cast iron socketed or flanged pipes, valves and specials etc outside from the trenches and stacking at a nearest convenient place					-	
	80 mm.		10 m		Haryana PWD	-	
	100 mm.		10 m	22.23	item 28.38	-	
	125 mm.		10 m	22.75	_	-	
	150 mm.		10 m	27.13		-	
	200 mm.		10 m	36.23	22 1 00	-	
	250 mm.		10 m	49.18	23-1-09	ı	
$\Box$	300 mm.		10 m	57.58		-	
	350 mm.		10 m	72.63		-	
	400 mm.		10 m	95.73	1	-	
	450 mm.		10 m	107.45	4	-	
	500 mm.		10 m	115.33		_	
			20 111	110.00	l .		l .

7	Providing and fixing cast iron double						Quantity of valves taken
	flanged sluice valves PN -1.6 marked with						roughly at one per KM
	IS 14846 including nuts and bolts marked						
	with IS 1363, rubber sheet marked with IS						
	638 etc carriage, loading, unloading,						
	stacking, handling, rehandling etc complete						
	in all respect to the satisfaction of engineer						
	in charge ( Makes AARKO, VENUS,						
	LEADER, SI, PANJA, UPADHAY						
	80 mm i/d	0	each	2573	Haryana PWD	=	
	100 mm i/d		each	3698	A & C slip No	88,752	
	150 mm i/d		each		CZC-6 dated 3-	11,418	
	200 mm i/d		each	9945		9,945	
	250 mm i/d		each	15589	ļ	15,589	
	300 mm i/d	1		18944	ŀ	18,944	
	350 mm i/d		each	30395	F	-	
	400 mm i/d	1	each	41120	F	41,120	
	450 mm i/d	1	each	48981	F	71,120	
	500 mm i/d		each	66911	F		
	600 mm i/d		each	95126			
8	Providing and fixing cast iron single air		Cacii	73120	Haryana PWD	<del>_</del>	size of air valve taken one
O	valves marked with IS 14845 including				A & C Slip		sixth of pipe dia and nomber
	carriage, loading, unloading, stacking,				CZC/3-7-09		of air valves taken at one per
	handling, rehandling etc drilling, tapping,				CEC/3-1-07		km
	screwing etc in valve connections complete						XIII
	in all respect to the satisfaction of engineer-						
	in-charge						
	*	2 -		4 < 4 ^		12.00.	
	40 mm i/d		each	1619		42,094	
	50 mm i/d	0	each	1771		-	
9	Providing and fixing cast iron double air						
	valves marked with IS 14845 including						
	carriage, loading, unloading, stacking,						
	handling, rehandling etc drilling, tapping,						
	screwing etc in valve connections complete						
	in all respect to the satisfaction of engineer-						
	in-charge						
	65 mm i/d		each		Haryana PWD	-	
	80 mm i/d		each		A & C Slip	-	
	100 mm i/d	0	each	2491	CZC/3-7-09	-	
10	Providing and fixing cast iron kinetic air						
	valves marked with IS 14845 including						
	carriage, loading, unloading, stacking,						
	handling, rehandling etc drilling, tapping,						
	screwing etc in valve connections complete						
	in all respect to the satisfaction of engineer-						
	in-charge						
	80 mm i/d	0	each	2824	Haryana PWD	-	
	100 mm i/d		each		A & C Slip	-	
	150 mm i/d		each		CZC/3-7-09	_	
	200 mm i/d		each	13267		_	
1	Sluice valve and air valve chamber:		each	5000	LS	280,000	
•	Providing and constructing brick masonry	50	30011	3000		200,000	
	valve chamber with 15 cm thick 1:3:6						
	proportion PCC bedding, excluding						
	excavation, Brick masonry in C.M. 1:5						
	Proportion 20 mm thick 1:4 placter present		1				
	Proportion, 20 mm thick 1:4 plaster, precast						
	RCC frame and cover, etc. complete as						
	RCC frame and cover, etc. complete as directed by Engineer-in-charge. (Wall						
	RCC frame and cover, etc. complete as						

12	Thrust Block: Providing and laying cement concrete in RCC (M-15, 1:2:4) with stone aggregate 20 mm nominal size for thrust blocks including compaction, curing, finishing, excluding cost of reinforcement & shuttering etc., Complete as per drawings and specifications and as directed by Engineer.	170.33	cum	2754	Haryana PWD item 10.79 plus 340% vide amendment 23- 1-09	469,007	
13	Thrust Block: Shuttering for precast plain or RC concrete wall plates, bed plates shelves etc	681.32	Sqm	40	Haryana PWD item 9.15 plus225% vide amendment 23- 1-09	27,568	
14	Providing TMT Steel Reinforcement as per IS: 1786 for RCC work including straightening, cutting, bending, placing in position and binding etc as per drawing all complete including cost of binding wire, labour, wastage etc.	68	Quintal	4127	Haryana PWD item 18.22 plus 350% vide amendment 23- 1-09	281,162	
15	Road Work:					1,683,750	
16	Mislenious items					1,122,500	
	Total					14,031,253	

S No	Item	Quantity	Unit	Rate	Reference for	Amount	Quantity
					Rate		Reference/Calculations
1	Excavation for pipelines running under				Item 6.9		Trench Width is pipe dia plus
	pressure in trenches and pits, in streets and				Haryana PWD & 300% above		300 mm, Minimum earth
	lanes including trimming and dressing sides,				vide		cover of 1 meter, average earth
	levelling of beds of trenches to correct grade,				amendment		cover of 1.15 m, Average
	cutting joint holes, cutting trees and bushes, etc. refilling consolidation and watering of				dated 1.1 08		depth of excavation is 1.15 plus pipe dia. For 110 mm
	refill, in 15 cm layers and restoration of				and 23.1.09		pipe excavation is
	unmetalled or unpaved surface to its original				and 23.1.07		(1.15+.11)*(.3+.11) ie
	condition, including the cost of dewatering						0.5166*L where L is length of
	of rain water, diversion of traffic, night						Pipe
	signals, fixing caution boards, crossing over						T TPC
	trenches for access to the houses, watching,						
	fancing etc. and disposal of surplus soil						
	outside and inside the town, involving lead						
	upto one km in ordinary soil (for new pipe						
	line and replacement pipes)						
A	Without timbering and shoring upto 1.5	13617	100	4732		644,344	
	metres depth		CUM			,-	
В	Excavation for thrust block	169.7		4732		8,032	
			CUM			.,	
С	With timbering and shoring upto 1.5 metres		100	6300		-	
	depth		CUM				
D	With timbering and shoring exceeding 1.5	5	100	6492		325	
	metres depth, but upto 2.25 metres depth		CUM				
Е	With timbering and shoring exceeding 2.25		100	6992		-	
	metres depth, but upto 3 metres depth		CUM				
2.	Supply, Laying, Jointing, Field Testing,						Factor for Excavation
-	Commissioning complete at site of HDPE						Quantity
	(PE 80 Grade Coumpound) Pipes PN-8.0						<b>C</b>
	(8.0 kg/sqcm) as per IS:4984 and						
	specifications for water application,						
	including all cost of material, labour						
	required, transportation, loading, unloading						
	& stacking etc. complete. (New Pipe Line)						
	110 mm	17043	RM	310	RA	5,288,336	0.5166
	125 mm	322.5	RM	399	RA	128,705	0.5334
	140 mm	272.5	RM	499	RA	135,967	0.5676
	160 mm	466	RM	650	RA	303,089	0.6026
	180 mm	73	RM	825	RA	60,199	0.6384
	200 mm	55	RM	1016	RA	55,891	0.675
	225 mm		RM	1282	RA	-	0.7314
	250 mm		RM	1585	RA	-	0.77
	280 mm		RM	1984	RA	-	0.8294
	315 mm		RM	2511	RA	-	0.8906
	355 mm	93.5		3180	RA	297,322	0.975
	400 mm	33.5		4129	RA	138,335	1.085
	450 mm		RM	5226	RA	-	1.2
	500 mm		RM	6443	RA	-	1.32
	Sub Total	18359	RM				
3	Supply, Laying, Jointing, Field Testing,						
	Commissioning complete at site of HDPE						
	(PE80 Grade Coumpound) Pipes PN-8.0 (8.0						
	kg/sqcm) as per IS:4984 and specifications						
	for water application, including all cost of						
	material, labour required, transportation,						
	loading, unloading & stacking etc. complete.						
	(replacement of line with a new pipeline)						
	110 mm	4938.5		310		1,532,386	0.5160
		630.5	RM	399	RA	251,623	0.5334
	125 mm 140 mm	277.5		499		138,461	0.5676

	1.00	140.5	D1.6	650	D.1	07.224	0.6026
	160 mm	149.5		650	RA	97,236	0.6026
	180 mm		RM	825	RA	252,339	0.6384
	200 mm		RM	1016	RA	51,826	0.675
	225 mm		RM	1282	RA	125,611	0.7314
	250 mm	121.5		1585	RA	192,590	0.77
	280 mm	183.5		1984	RA	364,013	0.8294
	315 mm		RM	2511	RA	791,004	0.8906
	355 mm	31.5	RM	3180	RA	100,167	0.975
	400 mm		RM	4129	RA	-	1.085
	450 mm		RM	5226	RA	-	1.2
	500 mm		RM	6443	RA	-	1.32
	Sub Total	7103	RM				
4	Dismantling pipeline of G.I./A.C./P.V.C./S.W./H.D.P.E. pipe including breaking the joints, lifting the pipes and stacking to the place as directed by Engineer-in-charge with all leads and lifts including cleaning the surface, etc. complete. (In place of dismentaled pipe another pipe is to be laid as such excavation for dismentalling is included in excavation for laying new pipe line)	7103	RM	12	LS	85,236	
			D.M.				
	80 mm.		R.M.	-		-	
	100 mm.		R.M.			-	
	125 mm.		R.M.			-	
	150 mm.		R.M.			-	
	200 mm.		R.M.			-	
	250 mm.		R.M.			-	
	300 mm.		R.M.			-	
	350 mm.		R.M.			-	
	400 mm.		R.M.			-	
	450 mm.		R.M.			-	
5	500 mm.  Dismentaling flanged joints for cast iron pipes, valves and specials including carriage of bolts, nuts and washers to store,		R.M.			-	
	50 to 100 mm internal diameter of pipe, valve, special	16	Per Joint	3.50	Haryana PWD item 28.38	56	
	125 to 200 mm internal diameter of pipe, valve, special	8	Per Joint		plus 250% vide	55	
	300 to 375 mm internal diameter of pipe, valve, special	6	Per Joint	17.50	amendment dt 23-1-09	105	
	400 to 450 mm internal diameter of pipe, valve, special			19.95		-	
	500 to 525 mm internal diameter of pipe, valve, special			22.05		-	
6	Taking out dismentaled cast iron socketed or flanged pipes, valves and specials etc outside from the trenches and stacking at a nearest convenient place					-	
	80 mm.		10 m	18 20	Haryana PWD	-	
	100 mm.		10 m	22.23	item 28.38	-	
	100 mm. 125 mm.		10 m	22.23	plus 250%		
					vide	-	
	150 mm. 200 mm.		10 m	27.13	amendment dt	-	
	200 mm. 250 mm.		10 m		23-1-09	-	
	250 mm. 300 mm.		10 m	49.18	23-1-09	-	
			10 m	57.58		-	
	350 mm.		10 m	72.63		-	
	400 mm.		10 m	95.73		-	
	450 mm.		10 m	107.45		-	
1	500 mm.		10 m	115.33		-	

7	Providing and fixing cast iron double						Quantity of valves taken
	flanged sluice valves PN -1.6 marked with						roughly at one per KM
	IS 14846 including nuts and bolts marked						l sag y sag r
	with IS 1363, rubber sheet marked with IS						
	638 etc carriage, loading, unloading,						
	stacking, handling, rehandling etc complete						
	in all respect to the satisfaction of engineer						
	in charge ( Makes AARKO, VENUS,						
	LEADER, SI, PANJA, UPADHAY						
	, . , . , . , .						
	80 mm i/d	0	each	2572	Haryana PWD	-	
	100 mm i/d	23			A & C slip No	85,054	
	150 mm i/d	5			CZC-6 dated 3-		
				9945		28,545	
	200 mm i/d	1			7-09	9,945	
	250 mm i/d	2		15589		31,178	
	300 mm i/d	2	each	18944		37,888	
	350 mm i/d	2	each	30395		60,790	
	400 mm i/d		each	41120		-	
	450 mm i/d		each	48981		_	
	500 mm i/d		each	66911		_	
	600 mm i/d		each	95126			
8	Providing and fixing cast iron single air		Jucii	73120			size of air valve taken one
0	valves marked with IS 14845 including						sixth of pipe dia and nomber
							* *
	carriage, loading, unloading, stacking,						of air valves taken at one per
	handling, rehandling etc drilling, tapping,						km
	screwing etc in valve connections complete						
	in all respect to the satisfaction of engineer-						
	in-charge						
	40 mm i/d	26	each	1619	Haryana PWD	42,094	
	50 mm i/d		each		A & C Slip	-	
9	Providing and fixing cast iron double air	0	Jucii	1//1	a c sup		
,							
	valves marked with IS 14845 including						
	carriage, loading, unloading, stacking,						
	handling, rehandling etc drilling, tapping,						
	screwing etc in valve connections complete						
	in all respect to the satisfaction of engineer-						
	in-charge						
	65 mm i/d	0	each	1883	Haryana PWD	_	
	80 mm i/d		each		A & C Slip		
	100 mm i/d		each		CZC/3-7-09	<u> </u>	
10		0	cacil	∠491	CEC13-1-07		
10	Providing and fixing cast iron kinetic air						
	valves marked with IS 14845 including						
	carriage, loading, unloading, stacking,						
	handling, rehandling etc drilling, tapping,						
	screwing etc in valve connections complete						
	in all respect to the satisfaction of engineer-						
	in-charge						
	80 mm i/d	0	each	2824	Haryana PWD		
	100 mm i/d		each		A & C Slip		
					CZC/3-7-09		
-	150 mm i/d		each		CZC/3-7-09	-	
	200 mm i/d		each	13267	T. C.	-	
11	Sluice valve and air valve chamber:	61	each	5000	LS	305,000	
	Providing and constructing Brick masonry						
	valve chamber with 15 cm thick 1:3:6						
	proportion PCC bedding, excluding						
	excavation, Brick masonry in C.M. 1:5						
	Proportion, 20 mm thick 1:4 plaster, precast						
	RCC frame and cover, etc. complete as						
	directed by Engineer-in-charge. (Wall						
	thickness: 0.23 M for depth of 1.2 M and						
	0.35 M for balance depth exceeding 1.2 M)						
			·	1			I

12	Thrust Block: Providing and laying cement concrete in RCC (M-15, 1:2:4) with stone aggregate 20 mm nominal size for thrust blocks including compaction, curing, finishing, excluding cost of reinforcement & shuttering etc., Complete as per drawings and specifications and as directed by Engineer.	169.7433333	cum	Haryana PWD item 10.79 plus 340% vide amendment 23- 1-09	467,392	
13	Thrust Block: Shuttering for precast plain or RC concrete wall plates, bed plates shelves etc	678.9733333	Sqm	Haryana PWD item 9.15 plus225% vide amendment 23- 1-09	27,473	
14	Providing TMT Steel Reinforcement as per IS: 1786 for RCC work including straightening, cutting, bending, placing in position and binding etc as per drawing all complete including cost of binding wire, labour, wastage etc.	68	Quint al	Haryana PWD item 18.22 plus 350% vide amendment 23- 1-09	280,194	
15	Road Work:				1,862,821	
16	Mislenious items				1,241,880	
	Total				15,523,505	

S No	Item	Quantity	Unit	Rate	Reference for	Amount	Quantity
- 1	E constitution (constitution of the				Rate		Reference/Calculations
1	Excavation for pipelines running under				Item 6.9		Trench Width is pipe dia plus
	pressure in trenches and pits, in streets and lanes including trimming and dressing sides,				Haryana PWD & 300% above		300 mm, Minimum earth cover of 1 meter, average earth
	levelling of beds of trenches to correct grade,				vide		cover of 1.15 m, Average
	cutting joint holes, cutting trees and bushes,				amendment		depth of excavation is 1.15
	etc. refilling consolidation and watering of				dated 1.1 08		plus pipe dia. For 110 mm
	refill, in 15 cm layers and restoration of				and 23.1.09		pipe excavation is
	unmetalled or unpaved surface to its original				and 23.1.07		(1.15+.11)*(.3+.11) ie
	condition, including the cost of dewatering of						0.5166*L where L is length of
	rain water, diversion of traffic, night signals,						Pipe
	fixing caution boards, crossing over trenches						· ·
	for access to the houses, watching, fancing						
	etc. and disposal of surplus soil outside and						
	inside the town, involving lead upto one km						
	in ordinary soil (for new pipe line and						
	replacement pipes)						
A	Without timbering and shoring upto 1.5	9032	100	4732		427381	
	metres depth		CUM				
В	Excavation for thrust block	103.0	100 CUM	4732		4873	
С	With timbering and shoring upto 1.5 metres		100 CUM	6300		0	
D	depth With timbering and shoring exceeding 1.5	5	100	6492		325	
L	metres depth, but upto 2.25 metres depth		CUM				
Е	With timbering and shoring exceeding 2.25		100	6992		0	
	metres depth, but upto 3 metres depth		CUM				
2	Supply, Laying, Jointing, Field Testing,						Factor for Excavation Quantity
	Commissioning complete at site of HDPE						
	(PE 80 Grade Coumpound) Pipes PN-8.0 (8.0 kg/sqcm) as per IS:4984 and specifications						
	for water application, including all cost of						
	material, labour required, transportation,						
	loading, unloading & stacking etc. complete.						
	(New Pipe Line)						
	110 mm	4708.5		310	RA	1461017.981	0.5166
	125 mm		RM	399	RA	361171.7802	0.5334
	140 mm	1290.5		499	RA	643907.88	0.5676
	160 mm	1041.5		650	RA	677398.099	0.6026
	180 mm	1140.5		825	RA	940500.004	0.6384
	200 mm 225 mm	435.5	RM	1016 1282	RA RA	442551.3721	0.675 0.7314
	250 mm	0	RM	1585	RA	14265.90792	0.7314
	280 mm	28.5		1984	RA	56536.0884	0.8294
	315 mm	20.3	RM	2511	RA	0	
	355 mm		RM	3180	RA	0	
	400 mm		RM	4129	RA	0	
	450 mm		RM	5226		0	
	500 mm		RM	6443	RA	0	
	Sub Total	9559					
3	Supply, Laying, Jointing, Field Testing,						
	Commissioning complete at site of HDPE						
	(PE80 Grade Coumpound) Pipes PN-8.0 (8.0						
	kg/sqcm) as per IS:4984 and specifications						
	for water application, including all cost of						
	material, labour required, transportation,						
	loading, unloading & stacking etc. complete.						
	(replacement of line with a new pipeline)						
	110 mm	1959	RM	310	RA	607865.3975	0.5166
	125 mm	221.5		399		88397.29206	0.5334
	140 mm	406.5		499	RA	202827.24	0.5676
	160 mm		RM	650		100162.561	0.6026
	180 mm	1035.5	КM	825	RA	853912.9804	0.6384

	200 mm	517.5	DM	1016	RA	525879.0702	0.675
	225 mm	540.5		1282	RA	692783.2157	0.7314
	250 mm	814.5	_	1585	RA RA	1291064.667	0.7314
	280 mm		RM	1984	RA	155722.2084	0.8294
	315 mm		RM	2511	RA	175778.6184	0.8294
	355 mm		RM	3180	RA	248033.7288	0.8900
	400 mm	70	RM	4129	RA	248033.7288	1.085
	450 mm	11.5	RM	5226	RA	60095.7225	1.003
	500 mm	11.5	RM	6443	RA	00073.7223	1.32
	Sub Total	5887	RM	0443	10.1	0	1.32
4	Dismantling pipeline of G.I./A.C./P.V.C./S.W./H.D.P.E. pipe including breaking the joints, lifting the pipes and stacking to the place as directed by	5887	RM	12	LS	70644	
	Engineer-in-charge with all leads and lifts including cleaning the surface, etc. complete. (In place of dismentaled pipe another pipe is to be laid as such excavation for dismentalling is included in excavation for laying new pipe line)						
	80 mm.		R.M.			0	
	100 mm.		R.M.			0	
	125 mm.		R.M.			0	
	150 mm.		R.M.			0	
	200 mm.		R.M.			0	
	250 mm.		R.M.			0	
	300 mm.		R.M.			0	
	350 mm.		R.M.			0	
	400 mm.		R.M.			0	
	450 mm.		R.M.			0	
	500 mm.		R.M.			0	
5	Dismentaling flanged joints for cast iron pipes, valves and specials including carriage of bolts, nuts and washers to store,						
	50 to 100 mm internal diameter of pipe, valve, special	12	Per Joint	3.50	Haryana PWD item 28.38	42	
	125 to 200 mm internal diameter of pipe,	8	Per	6.83	plus 250%	54.6	
	valve, special		Joint		vide		
	300 to 375 mm internal diameter of pipe, valve, special	4	Per Joint	17.50	amendment dt 23-1-09	70	
	400 to 450 mm internal diameter of pipe, valve, special			19.95		0	
	500 to 525 mm internal diameter of pipe, valve, special			22.05		0	
6	Taking out dismentaled cast iron socketed or flanged pipes, valves and specials etc outside from the trenches and stacking at a nearest convenient place					0	
	80 mm.		10 m	18.20	Haryana PWD	0	
	100 mm.		10 m	22.23	item 28.38	0	
	125 mm.		10 m	22.75	plus 250%	0	
	150 mm.		10 m	27.13	vide	0	
	200 mm.		10 m	36.23	amendment dt	0	_
	250 mm.		10 m	49.18	23-1-09	0	
	300 mm.		10 m	57.58		0	
	350 mm.		10 m	72.63		0	
	400 mm.		10 m	95.73		0	
	450 mm.		10 m	107.45		0	
	500 mm.		10 m	115.33		0	

7	Providing and fixing cast iron double flanged						Quantity of valves taken
	sluice valves PN -1.6 marked with IS 14846						roughly at one per KM
	including nuts and bolts marked with IS						
	1363, rubber sheet marked with IS 638 etc						
	carriage, loading, unloading, stacking,						
	handling, rehandling etc complete in all						
	respect to the satisfaction of engineer in						
	charge ( Makes AARKO, VENUS, LEADER,						
	SI, PANJA, UPADHAY						
	80 mm i/d	0	each	2573	Haryana PWD	0	
	100 mm i/d	8	each		A & C slip No	29584	
	150 mm i/d	3	each	5709	CZC-6 dated 3-	17127	
	200 mm i/d	3	each	9945	7-09	29835	
	250 mm i/d	2		15589		31178	
	300 mm i/d		each	18944		37888	
	350 mm i/d		each	30395	-	30395	
		1			+		
	400 mm i/d	4	each	41120	<del> </del>	49091	
	450 mm i/d	1	each	48981		48981	
	500 mm i/d		each	66911		0	
_	600 mm i/d		each	95126		0	
8	Providing and fixing cast iron single air						size of air valve taken one
	valves marked with IS 14845 including						sixth of pipe dia and nomber
	carriage, loading, unloading, stacking,						of air valves taken at one per
	handling, rehandling etc drilling, tapping,						km
	screwing etc in valve connections complete in						
	all respect to the satisfaction of engineer-in-						
	charge						
	40 mm i/d	15	each	1610	Haryana PWD	24285	
	50 mm i/d		each		A & C Slip	24283	
		U	eacn	1//1	A & C Slip	0	
9	Providing and fixing cast iron double air						
	valves marked with IS 14845 including						
	carriage, loading, unloading, stacking,						
	handling, rehandling etc drilling, tapping,						
	screwing etc in valve connections complete in						
	all respect to the satisfaction of engineer-in-						
	charge						
	65 mm i/d	0	each	1883	Haryana PWD	0	
	80 mm i/d	0	each		A & C Slip	0	
	100 mm i/d		each	2491	CZC/3-7-09	0	
10	Providing and fixing cast iron kinetic air		cacii	2171			
10	valves marked with IS 14845 including						
	_						
	carriage, loading, unloading, stacking,						
	handling, rehandling etc drilling, tapping,						
	screwing etc in valve connections complete in						
	all respect to the satisfaction of engineer-in-						
	charge						
	80 mm i/d	0	each	2824	Haryana PWD	0	
	100 mm i/d	0	each	3098	A & C Slip	0	
	150 mm i/d		each	7514	CZC/3-7-09	0	
	200 mm i/d	0		13267		0	
11	Sluice valve and air valve chamber:		each	5000	LS	175000	
11	Providing and constructing Brick masonry	33	Jucii	3000		173000	
	valve chamber with 15 cm thick 1:3:6						
	proportion PCC bedding, excluding						
	excavation, Brick masonry in C.M. 1:5						
	Proportion, 20 mm thick 1:4 plaster, precast						
	RCC frame and cover, etc. complete as						
	directed by Engineer-in-charge. (Wall		1	1			
	thickness: 0.23 M for depth of 1.2 M and						

12	Thrust Block: Providing and laying cement concrete in RCC (M-15, 1:2:4) with stone aggregate 20 mm nominal size for thrust blocks including compaction, curing, finishing, excluding cost of reinforcement & shuttering etc., Complete as per drawings and specifications and as directed by Engineer.	102.9733	cum	Haryana PWD item 10.79 plus 340% vide amendment 23- 1-09	283539.1328	
13	<b>Thrust Block</b> : Shuttering for precast plain or RC concrete wall plates, bed plates shelves etc	411.8933	Sqm	Haryana PWD item 9.15 plus225% vide amendment 23- 1-09	16666	
14	Providing TMT Steel Reinforcement as per IS: 1786 for RCC work including straightening, cutting, bending, placing in position and binding etc as per drawing all complete including cost of binding wire, labour, wastage etc.	41	Quint al	Haryana PWD item 18.22 plus 350% vide amendment 23- 1-09	169977	
15	Road Work:				1649657.411	
16	Mislenious items				1099771.607	
	Total				13747145	

S No	Item	Quantity	Unit	Rate	Reference for Rate	Amount	Quantity Reference/Calculations
1	Excavation for pipelines running under pressure in trenches and pits, in streets and lanes including trimming and dressing sides, levelling of beds of trenches to correct grade, cutting joint holes, cutting trees and bushes, etc. refilling consolidation and watering of refill, in 15 cm layers and restoration of unmetalled or unpaved surface to its original condition, including the cost of dewatering of rain water, diversion of traffic, night signals, fixing caution boards, crossing over trenches for access to the houses, watching, fancing etc. and disposal of surplus soil outside and inside the town, involving lead upto one km in ordinary soil (for new pipe line and replacement pipes)				Item 6.9 Haryana PWD & 300% above vide amendment dated 1.1 08 and 23.1.09		Trench Width is pipe dia plus 300 mm, Minimum earth cover of 1 meter, average earth cover of 1.15 m, Average depth of excavation is 1.15 plus pipe dia. For 110 mm pipe excavation is (1.15+.11)*(.3+.11) ie 0.5166*L where L is length of Pipe
A	Without timbering and shoring upto 1.5 metres depth	13100	100 CUM	4732		619,913	
В	Excavation for thrust block	161.3	100 CUM	4732		7,632	
2	Supply, Laying, Jointing, Field Testing, Commissioning complete at site of HDPE (PE 80 Grade Coumpound) Pipes PN-8.0 (8.0 kg/sqcm) as per IS:4984 and specifications for water application, including all cost of material, labour required, transportation, loading, unloading & stacking etc. complete. (New Pipe Line)						Factor for Excavation Quantity
	110 mm	8749.5	RM	310	RA	2,714,915	0.5166
	125 mm	357.5	RM	399	RA	142,673	0.5334
	140 mm	465.5	RM	499	RA	232,266	0.5676
	160 mm	235.5		650	RA	153,171	0.6026
	180 mm	161.5		825	RA	133,179	0.6384
	200 mm	402.5		1016		409,017	0.675
	225 mm	86.5		1282	RA	110,871	0.7314
	280 mm		RM	1984	RA	33,723	0.8294
	355 mm	54.5		3180	RA	173,306	0.975
3	Sub Total Supply, Laying, Jointing, Field Testing, Commissioning complete at site of HDPE (PE80 Grade Coumpound) Pipes PN-8.0 (8.0 kg/sqcm) as per IS:4984 and specifications for water application, including all cost of	10530	KIM				
	material, labour required, transportation, loading, unloading & stacking etc. complete. (replacement of line with a new pipeline)						
	loading, unloading & stacking etc. complete. (replacement of line with a new pipeline) 110 mm	9213		310		2,858,736	0.5166
	loading, unloading & stacking etc. complete. (replacement of line with a new pipeline)  110 mm  125 mm	1467.5	RM	399	RA	585,657	0.5334
	loading, unloading & stacking etc. complete. (replacement of line with a new pipeline) 110 mm 125 mm 140 mm	1467.5 400.5	RM RM	399 499	RA RA	585,657 199,833	0.5334 0.5676
	loading, unloading & stacking etc. complete. (replacement of line with a new pipeline) 110 mm 125 mm 140 mm	1467.5 400.5 602.5	RM RM RM	399 499 650	RA RA RA	585,657 199,833 391,870	0.5334 0.5676 0.6026
	loading, unloading & stacking etc. complete. (replacement of line with a new pipeline)  110 mm  125 mm  140 mm  160 mm  200 mm	1467.5 400.5 602.5 1849.5	RM RM RM RM	399 499 650 1016	RA RA RA RA	585,657 199,833 391,870 1,879,446	0.5334 0.5676 0.6026 0.675
	loading, unloading & stacking etc. complete. (replacement of line with a new pipeline) 110 mm 125 mm 140 mm	1467.5 400.5 602.5 1849.5 81.5	RM RM RM RM	399 499 650	RA RA RA RA	585,657 199,833 391,870	0.5334 0.5676 0.6026

4	Dismantling pipeline of G.I./A.C./P.V.C./S.W./H.D.P.E. pipe including breaking the joints, lifting the pipes and stacking to the place as directed by Engineer-in-charge with all leads and lifts including cleaning the surface, etc. complete. (In place of dismentaled pipe another pipe is to be laid as such excavation for dismentalling is included in excavation for laying new pipe line)	13664	RM	12	LS	163,968	
5	Dismentaling flanged joints for cast iron pipes, valves and specials including carriage of bolts, nuts and washers to store,						
	50 to 100 mm internal diameter of pipe, valve, special	30	Per Joint	3.50	Haryana PWD item 28.38	105	
	125 to 200 mm internal diameter of pipe, valve, special	20	Per Joint	6.83	plus 250% vide	137	
	300 to 375 mm internal diameter of pipe,	10	Per Joint	17.50	amendment dt	175	
7	Providing and fixing cast iron double flanged sluice valves PN -1.6 marked with IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge ( Makes AARKO, VENUS,						Quantity of valves taken roughly at one per KM
	100 mm i/d	20	each	3698	Haryana PWD	73,960	
	150 mm i/d	2	each		A & C slip No	11,418	
	200 mm i/d		each		CZC-6 dated 3-	29,835	
	250 mm i/d		each	15589	7-09	15,589	
8	350 mm i/d Providing and fixing cast iron single air valves marked with IS 14845 including carriage, loading, unloading, stacking, handling, rehandling etc drilling, tapping, screwing etc in valve connections complete in all respect to the satisfaction of engineer- in-charge	1	each	30395	Haryana PWD A & C Slip CZC/3-7-09	30,395	size of air valve taken one sixth of pipe dia and nomber of air valves taken at one per km
	40 mm i/d	24	each	1619		38,856	
11	Sluice valve and air valve chamber: Providing and constructing Brick masonry valve chamber with 15 cm thick 1:3:6 proportion PCC bedding, excluding excavation, Brick masonry in C.M. 1:5 Proportion, 20 mm thick 1:4 plaster, precast RCC frame and cover, etc. complete as directed by Engineer-in-charge. (Wall thickness: 0.23 M for depth of 1.2 M and 0.35 M for balance depth exceeding 1.2 M.)	51	each	5000		255,000	
12	Thrust Block: Providing and laying cement concrete in RCC (M-15, 1:2:4) with stone aggregate 20 mm nominal size for thrust blocks including compaction, curing, finishing, excluding cost of reinforcement & shuttering etc., Complete as per drawings and specifications and as directed by	161.29		2754	Haryana PWD item 10.79 plus 340% vide amendment 23- 1-09	444,115	
13 14	Thrust Block: Shuttering for precast plain or RC concrete wall plates, bed plates shelves etc. Providing TMT Steel Reinforcement as per IS: 1786 for RCC work including straightening, cutting, bending, placing in position and binding etc as per drawing all complete including cost of binding wire, labour, wastage etc.  Road Work:	645.16	Sqm		Haryana PWD item 9.15 nlus225% vide Haryana PWD item 18.22 plus 350% vide amendment 23- 1-09	26,105 266,240 1,827,636	
16	Mislenious items Total					1,218,424 15,230,297	

# $\ \, \textbf{Detailed Estimate for Distribution System - Zone 13} \\$

S No	Item	Quantity	Unit	Rate	Reference for Rate	Amount	Quantity Reference/Calculations
	Excavation for pipelines running under pressure in trenches and pits, in streets and lanes including trimming and dressing sides, levelling of beds of trenches to correct grade, cutting joint holes, cutting trees and bushes, etc. refilling consolidation and watering of refill, in 15 cm layers and restoration of unmetalled or unpaved surface to its original condition, including the cost of dewatering of rain water, diversion of traffic, night signals, fixing caution boards, crossing over trenches for access to the houses, watching, fancing etc. and disposal of surplus soil outside and inside the town, involving lead upto one km in ordinary soil (for new pipe line and replacement pipes)				Item 6.9 Haryana PWD & 300% above vide amendment dated 1.1 08 and 23.1.09		Trench Width is pipe dia plus 300 mm, Minimum earth cover of 1 meter, average earth cover of 1.15 m, Average depth of excavation is 1.15 plus pipe dia. For 110 mm pipe excavation is (1.15+11)*(.3+.11) ie 0.5166*L where L is length of Pipe
	Without timbering and shoring upto 1.5 metres depth	10278	100 CUM	4732		486,361	
В	Excavation for thrust block	128.5	100 CUM	4732		6,081	
	With timbering and shoring upto 1.5 metres depth		100 CUM	6300		-	
	With timbering and shoring exceeding 1.5 metres depth, but upto 2.25 metres depth	5	100 CUM	6492		325	
	With timbering and shoring exceeding 2.25 metres depth, but upto 3 metres depth		100 CUM	6992		-	
	Supply, Laying, Jointing, Field Testing, Commissioning complete at site of HDPE (PE 80 Grade Coumpound) Pipes PN-8.0 (8.0 kg/sqcm) as per IS:4984 and specifications for water application, including all cost of material, labour required, transportation, loading, unloading & stacking etc. complete. (New Pipe Line)						Factor for Excavation Quantity
	110 mm	10510	RM	310	RA	3,261,187	0.5166
	125 mm	919.5	RM	399	RA	366,959	0.5334
$\vdash$	140 mm		RM	499		188,108	0.5676
	160 mm	233.5		650		151,870	0.6026
$\vdash$	180 mm	459.5		825		378,921	0.6384
	200 mm		RM	1016		-	0.675
-	225 mm	42	RM	1282		-	0.7314
-	250 mm 280 mm	27.5	RM pm	1585 1984		66,574 54,552	0.77 0.8294
	315 mm	21.3	RM RM	2511		34,332	0.8294
	315 mm 355 mm		RM RM	3180	RA RA	-	0.8906
-	400 mm		RM RM	4129		-	1.085
-	450 mm		RM	5226		-	1.083
	500 mm		RM	6443		-	1.32
				0173			1.52

3	Supply, Laying, Jointing, Field Testing,						
	Commissioning complete at site of HDPE						
	(PE80 Grade Coumpound) Pipes PN-8.0						
	(8.0 kg/sqcm) as per IS:4984 and						
	specifications for water application,						
	including all cost of material, labour						
	required, transportation, loading, unloading						
	& stacking etc. complete. (replacement of						
	line with a new pipeline)						
	110 mm	3290	RM	310	RA	1,020,866	0.5166
	125 mm	1822.5	RM	399	RA	727,332	0.5334
	140 mm	736.5	RM	499	RA	367,484	0.5676
	160 mm	433.5		650	RA	281,951	0.6026
	180 mm	234	RM	825	RA	192,965	0.6384
	200 mm	70.5	RM	1016	RA	71,641	0.675
	225 mm		RM	1282	RA	-	0.7314
	250 mm		RM	1585	RA	ì	0.77
	280 mm	88.5	RM	1984		175,559	0.8294
	315 mm		RM	2511	RA	-	0.8906
	355 mm		RM	3180	RA	-	0.975
	400 mm	31	RM	4129	RA	128,012	1.085
	450 mm		RM	5226	RA	-	1.2
	500 mm		RM	6443	RA	-	1.32
	Sub Total	6707	RM				
4	Dismantling pipeline of	6707	RM	12	LS	80,484	
	G.I./A.C./P.V.C./S.W./H.D.P.E. pipe						
	including breaking the joints, lifting the						
	pipes and stacking to the place as directed						
	by Engineer-in-charge with all leads and						
	lifts including cleaning the surface, etc.						
	complete. (In place of dismentaled pipe						
	another pipe is to be laid as such						
	excavation for dismentalling is included in						
	excavation for laying new pipe line)						
	80 mm.		R.M.			-	
	100 mm.		R.M.			-	
	125 mm.		R.M.			-	
	150 mm.		R.M.			-	
	200 mm.		R.M.			-	
	250 mm.		R.M.			-	
	300 mm.		R.M.				
	350 mm.		R.M.			-	
	400 mm.		R.M.			-	
	450 mm.		R.M.			-	
	500 mm.		R.M.			-	
5	Dismentaling flanged joints for cast iron					-	
,	pipes, valves and specials including						
	carriage of bolts, nuts and washers to store,						
	carrage of coits, nats and washers to store,						
	50 to 100 mm internal diameter of pipe,	24	Per Joint	3 50	Haryana PWD	84	
	valve, special	24	1 Ci Joint	3.30	item 28.38	04	
<b>-</b>	125 to 200 mm internal diameter of pipe,	17	Dan Ioint	602	plus 250%	109	
Ī	valve, special	16	Per Joint	0.83	vide	109	
	300 to 375 mm internal diameter of pipe,		Per Joint	17 50	amendment dt	105	
	valve, special	6	r et joint	17.50	23-1-09	105	
				10.05			
	400 to 450 mm internal diameter of pipe,			19.95		-	
<u> </u>	valve, special 500 to 525 mm internal diameter of pipe,			22.05			
	valve, special			22.05		-	
<u> </u>	varve, special		1	l			

6	Taking out dismentaled cast iron socketed or flanged pipes, valves and specials etc outside from the trenches and stacking at a nearest convenient place					-	
	80 mm.		10 m	18.20	Haryana PWD	i	
	100 mm.		10 m	22.23	item 28.38	-	
	125 mm.		10 m	22.75	plus 250%	-	
	150 mm.		10 m	27.13	vide	=	
	200 mm.		10 m	36.23	amendment dt	=	
	250 mm.		10 m	49.18	23-1-09	-	
	300 mm.		10 m	57.58		-	
	350 mm.		10 m	72.63		-	
	400 mm.		10 m	95.73		=	
	450 mm.		10 m	107.45		-	
	500 mm.		10 m	115.33		-	
	Providing and fixing cast iron double flanged sluice valves PN -1.6 marked with IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge ( Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY						Quantity of valves taken roughly at one per KM
	80 mm i/d		each		Haryana PWD	-	
	100 mm i/d	17	each		A & C slip No	62,866	
	150 mm i/d	2	each		CZC-6 dated 3-	11,418	
	200 mm i/d	2	each	9945	7-09	19,890	
	250 mm i/d	1	each	15589		15,589	
	300 mm i/d	1	each	18944		18,944	
	350 mm i/d		each	30395		-	
	400 mm i/d		each	41120		-	
	450 mm i/d	1	each	48981		48,981	
	500 mm i/d		each	66911		-	
	600 mm i/d		each	95126		-	
	Providing and fixing cast iron single air valves marked with IS 14845 including carriage, loading, unloading, stacking, handling, rehandling etc drilling, tapping, screwing etc in valve connections complete in all respect to the satisfaction of engineer-in-charge				Haryana PWD A & C Slip CZC/3-7-09		size of air valve taken one sixth of pipe dia and nomber of air valves taken at one per km
	40 mm i/d	19	each	1619		30,761	
	50 mm i/d	0	each	1771		=	
9	Providing and fixing cast iron double air valves marked with IS 14845 including carriage, loading, unloading, stacking, handling, rehandling etc drilling, tapping,						
	screwing etc in valve connections complete in all respect to the satisfaction of engineer- in-charge						
	65 mm i/d		each		Haryana PWD	i	
	80 mm i/d		each		A & C Slip	-	
ļ	100 mm i/d	0	each	2491	CZC/3-7-09	-	
	Providing and fixing cast iron kinetic air valves marked with IS 14845 including carriage, loading, unloading, stacking,						
	handling, rehandling etc drilling, tapping, screwing etc in valve connections complete in all respect to the satisfaction of engineer-						
	in-charge						
	80 mm i/d	0	each	2824	Haryana PWD	-	
	100 mm i/d	0	each	3098	A & C Slip	-	
	150 mm i/d	0	each		CZC/3-7-09	1	
	200 mm i/d	0	each	13267		1	

11	Sluice valve and air valve chamber: Providing and constructing Brick masonry valve chamber with 15 cm thick 1:3:6 proportion PCC bedding, excluding excavation, Brick masonry in C.M. 1:5 Proportion, 20 mm thick 1:4 plaster, precast RCC frame and cover, etc. complete as directed by Engineer-in- charge. (Wall thickness: 0.23 M for depth of 1.2 M and 0.35 M for balance depth exceeding 1.2 M)	43	each	5000	LS	215,000	
12	Thrust Block: Providing and laying cement concrete in RCC (M-15, 1:2:4) with stone aggregate 20 mm nominal size for thrust blocks including compaction, curing, finishing, excluding cost of reinforcement & shuttering etc., Complete as per drawings and specifications and as directed by Engineer.	128.5033	cum	2754	Haryana PWD item 10.79 plus 340% vide amendment 23- 1-09	353,836	
13	Thrust Block: Shuttering for precast plain or RC concrete wall plates, bed plates shelves etc	514.0133	Sqm	40	Haryana PWD item 9.15 plus225% vide amendment 23- 1-09	20,798	
14	Providing TMT Steel Reinforcement as per IS: 1786 for RCC work including straightening, cutting, bending, placing in position and binding etc as per drawing all complete including cost of binding wire, labour, wastage etc.	51	Quintal		Haryana PWD item 18.22 plus 350% vide amendment 23- 1-09	212,119	
15 16	Road Work: Mislenious Items					1,352,660 901,773	
10	Total					11,272,167	

S No	Item	Quantity	Unit	Rate	Reference for Rate	Amount	Quantity Reference/Calculations
	Excavation for pipelines running under pressure in trenches and pits, in streets and lanes including trimming and dressing sides, levelling of beds of trenches to correct grade, cutting joint holes, cutting trees and bushes, etc. refilling consolidation and watering of refill, in				Item 6.9 Haryana PWD & 300% above vide amendment dated 1.1 08 and 23.1.09		Trench Width is pipe dia plus 300 mm, Minimum earth cover of 1 meter, average earth cover of 1.15 m, Average depth of excavation is 1.15 plus pipe dia. For 110 mm pipe excavation is (1.15+.11)*(.3+.11) ie
	15 cm layers and restoration of unmetalled or unpaved surface to its original condition, including the cost of dewatering of rain water, diversion of traffic, night signals, fixing caution boards, crossing over trenches for access to the						0.5166*L where L is length of Pipe
	houses, watching, fancing etc. and disposal of surplus soil outside and inside the town, involving lead upto one km in ordinary soil (for new pipe line and replacement pipes)						
A	Without timbering and shoring upto 1.5 metres depth	15900	100 CUM	4732		752,370	
В	Excavation for thrust block	185.9	100 CUM	4732		8,794	
С	With timbering and shoring upto 1.5 metres depth		100 CUM	6300		-	
D	With timbering and shoring exceeding 1.5 metres depth, but upto 2.25 metres depth		100 CUM	6492		-	
Е	With timbering and shoring exceeding 2.25 metres depth, but upto 3 metres depth		100 CUM	6992		-	
	Supply, Laying, Jointing, Field Testing, Commissioning complete at site of HDPE (PE 80 Grade Coumpound) Pipes PN-8.0 (8.0 kg/sqcm) as per IS:4984 and specifications for water application, including all cost of material, labour required, transportation, loading, unloading & stacking etc. complete. (New Pipe Line)						Factor for Excavation Quantity
	110 mm	13862.5		310		4,301,447	0.5166
	125 mm 140 mm	4277.5 2046		399 499		1,707,085 1,020,872	0.5334 0.5676
	160 mm	2145.5		650		1,395,447	0.6026
	180 mm	1258.5		825		1,037,807	0.6384
	200 mm 225 mm	1749	RM	1016 1282		1,777,319	0.675 0.7314
	250 mm	1507		1585	RA	2,388,747	0.77
	280 mm	902	RM	1984		2.016.422	0.8294 0.8906
	315 mm 355 mm	803		2511 3180	RA RA	2,016,432 44,519	0.8906
	400 mm		RM	4129		-	1.085
	450 mm 500 mm		RM RM	5226 6443		-	1.2
	Sub Total	27663		0443	KA	-	1.32
	Supply, Laying, Jointing, Field Testing, Commissioning complete at site of HDPE (PE80 Grade Coumpound) Pipes PN-8.0 (8.0 kg/sqcm) as per IS:4984 and specifications for water application, including all cost of material, labour required, transportation, loading, unloading & stacking etc. complete. (replacement of line with a new pipeline)						
	110 mm		RM	310		-	0.5166
	125 mm 140 mm		RM RM	399 499	RA	-	0.5334 0.5676
	160 mm	215		650		139,512	0.6026
-	180 mm 200 mm		RM RM	825 1016		-	0.6384 0.675
	225 mm		RM	1282		-	0.7314
	250 mm		RM	1585	RA	-	0.77
	280 mm		RM	1984		-	0.8294
	315 mm 355 mm		RM RM	2511 3180		-	0.8906
	400 mm		RM	4129		-	1.085
	450 mm		RM	5226	RA	-	1.2
	500 mm	-	RM RM	6443	RA	-	1.32

215 RM   12   1.5   2.580								
GLAC.PV.C.S.W.H.D.P.E. pipes including breaking the joints, lifting the pipes and stacking to the place as directed by Engineer-in-charge with all leads and lifts including cleaning the surface, etc., complete. (In place of dismentaled pipe another pipe is to be laid as such excavation for dismental light is to be laid as such excavation for longing new pipe line)    90 mm.	4	Dismantling pipeline of	215	RM	12	LS	2,580	
breaking the joints, lifting the pipes and stacking to the place addrected. In place of discrete, the place of discrete. (In place of discrete place as directed. In place of discrete place as directed. Page and the place as directed. In place of discrete place as directed. Page as a such excavation for laying new pipe line)    80 mm.					-		_,00	
Section   Sect								
change with all leads and lifts including cleaning the surface, etc. complete, flap piec of dismensated pipe another pipe is to be laid as such executation for dismensating is included in excavation for laying new pipe line)		0 3 , 0 11						
cleaning the surface, etc. complete. (In place of dismental of pipe another pipe is to be laid as such excavation for dismental pipe another pipe is to be laid as such excavation for laying new pipe line)   R.M.		stacking to the place as directed by Engineer-in-						
cleaning the surface, etc. complete. (In place of dismental of pipe another pipe is to be laid as such excavation for dismental pipe another pipe is to be laid as such excavation for laying new pipe line)   R.M.		charge with all leads and lifts including						
dismentated pipe another pipe is to be laid as such exercation for dismentaling is included in execution for Injury growing new pipe line)   R.M.								
So mm.								
RV   RV   RV   RV   RV   RV   RV   RV								
St. mm		such excavation for dismentalling is included in						
Strom		excavation for laving new pipe line)						
100 mm.   R.M.		3 3 11 1						
100 mm								
150 mm							-	
150 mm.		100 mm.		R.M.			-	
150 mm.		125 mm.		R.M.			-	
200 mm		150 mm		R M				
250 mm.   R.M.   -   -								
300 mm.   R.M.								
S. O mm.		250 mm.		R.M.			-	
400 mm.   R.M.		300 mm.		R.M.			-	
400 mm.   R.M.		350 mm		R M				
4.50 mm.   R.M.								
So 0 mm								
5   Dismentaling flanged joints for cast iron pipes, valves and specials including carriage of bolts, nuts and washers to store,		450 mm.		R.M.				
5   Dismentaling flanged joints for cast iron pipes, valves and specials including carriage of bolts, nuts and washers to store,		500 mm.		R.M.			-	
valves and specials including carriage of bolts, nuts and washers to store.	5							
nuts and washers to store,	J							
So to 100 mm internal diameter of pipe, valve, special   125 to 200 mm internal diameter of pipe, valve, special   17.50   19.95   17.50   19.95   1								
Special		nuts and washers to store,						
Special   Item 28.38 plus   Special   Item 28.38 plus   Special		50 to 100 mm internal diameter of pipe, valve.			3.50	Haryana PWD	-	
125 to 200 mm internal diameter of pipe, valve, special   1-9								
Special   Spec		-		D				
17.50   1-09   -			4	Per joint	6.83		27	
Special   400 to 450 mm internal diameter of pipe, valve, special   500 to 525 mm internal diameter of pipe, valve, special   22.05   -		special						
Special   400 to 450 mm internal diameter of pipe, valve, special   500 to 525 mm internal diameter of pipe, valve, special   22.05   -		300 to 375 mm internal diameter of pipe, valve.			17.50	1-09	-	
19.95   Special   19.95   Sp								
Sepecial		-						
500 to 525 mm internal diameter of pipe, valve, special  7 Taking out dismentaled cast iron socketed or flanged pipes, valves and specials etc outside from the trenches and stacking at a nearest convenient place  80 mm.  100 m  100 m  22.23  125 mm.  100 m  10 m  27.13  200 mm.  10 m  10 m  27.13  300 mm.  10 m  10 m  36.23  250 mm.  10 m  49.18  300 mm.  10 m  57.88  350 mm.  10 m  10 m  72.63  400 mm.  10 m  10 m  10 m  10 m  10 m  50.33  450 mm.  10 m  10 m  115.33  -  Providing and fixing cast iron double flanged sluice valves PN -1.6 marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge ( Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY  80 mm i/d  100 mm i/d  18 each  250 mm i/d  20 each  2573 Haryana PWD  4 cach  500 mm i/d  20 each  2573 Haryana PWD  4 cach  500 mm i/d  20 mm i/d  20 each  2578 Haryana PWD  4 cach  500 mm i/d  20 mm i/d  20 each  2579 6 dated 3-7-09  22.836  31,178  31,178  31,178  30,395  400 mm i/d  1 each  30395  400 mm i/d  1 each  30395  400 mm i/d  1 each  30395  400 mm i/d  1 each  30395					19.95		-	
Special   Spec		special						
Special		500 to 525 mm internal diameter of pine, valve			22.05		_	
Taking out dismentaled cast iron socketed or flanged pipes, valves and specials etc outside from the trenches and stacking at a nearest convenient place   10 m					00			
Flanged pipes, valves and specials etc outside from the trenches and stacking at a nearest convenient place		1						
From the trenches and stacking at a nearest convenient place   S0 mm.   10 m   18.20   100 mm.   100 mm   22.23   125 mm.   10 m   22.75   150 mm.   10 m   27.13   250 mm.   10 m   36.23   1-09   -	6						-	
From the trenches and stacking at a nearest convenient place   S0 mm.   10 m   18.20   100 mm.   100 mm   22.23   125 mm.   10 m   22.75   150 mm.   10 m   27.13   250 mm.   10 m   36.23   1-09   -		flanged pipes, valves and specials etc outside						
Convenient place     10 m   18.20   10 m   18.20   125 mm.   10 m   22.23   125 mm.   10 m   22.75   150 mm.   10 m   36.23   125 mm.   10 m   36.23   1-09   - 1   10 m   36.23   1-09   - 1   10 m   36.23   1-09   - 1   10 m   36.23   1-09   - 1   10 m   36.23   1-09   - 1   10 m   36.23   1-09   - 1   10 m   36.23   1-09   - 1   10 m   36.23   1-09   - 1   10 m   36.23   1-09   - 1   10 m   36.23   1-09   - 1   10 m   36.23   1-09   - 1   10 m   36.23   1-09   - 1   10 m   36.23   1-09   - 1   10 m   36.23   1-09   - 1   10 m   36.23   1-09   - 1   10 m   36.23   1-09   - 1   10 m								
10 m   18.20   10 m   22.23   125 mm.   10 m   22.75   150 mm.   10 m   27.713   250% vide   3								
100 mm.		*		10		**		
125 mm.								
125 mm.		100 mm.		10 m	22.23	item 28.38 plus	-	
150 mm.		125 mm.		10 m		_	-	
200 mm.								
250 mm.   10 m   49.18   -								
300 mm.							-	
350 mm.		250 mm.		10 m	49.18		-	
350 mm.		300 mm.		10 m	57.58	]	-	
400 mm.								
450 mm.						4		
10 m   115.33   -								
Providing and fixing cast iron double flanged sluice valves PN -1.6 marked with IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge ( Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY     Pand		450 mm.		10 m	107.45			
Providing and fixing cast iron double flanged sluice valves PN -1.6 marked with IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge ( Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY     Pand		500 mm.		10 m	115.33		-	
Sluice valves PN -1.6 marked with IS 14846   including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge ( Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY   80 mm i/d   18 each   3698	7							Quantity of valves taken roughly at
including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge ( Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY  80 mm i/d  80 mm i/d  18 each  18 each  2573  4 aryana PWD A  C Slip No CZC-  66,564  150 mm i/d  4 each  5709  200 mm i/d  2 each  250 mm i/d  2 each  9945  250 mm i/d  1 each  15589  300 mm i/d  1 each  18944  350 mm i/d  1 each  30395  400 mm i/d  1 each  41120  -	,							
rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge ( Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY  80 mm i/d  80 mm i/d  18 each  100 mm i/d  18 each  150 mm i/d  20 each  2573 Haryana PWD A  C Slip No CZC-  66,564  150 mm i/d  2 each  250 mm i/d  2 each  250 mm i/d  2 each  1589  300 mm i/d  1 each  1589  300 mm i/d  1 each  18944  350 mm i/d  1 each  30395  400 mm i/d  2 each  41120								one per KM
loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge ( Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY  80 mm i/d  100 mm i/d  18 each  150 mm i/d  20 mm i/d  2 each  2573 Haryana PWD A  4 each  5709 6 dated 3-7-09  22,836  200 mm i/d  2 each  150 mm i/d  2 each  150 mm i/d  1 each  300 mm i/d  1 each  300 mm i/d  1 each  300 mm i/d  1 each  30395  400 mm i/d  4 each  4 1120		including nuts and bolts marked with IS 1363,						
loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge ( Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY  80 mm i/d  100 mm i/d  18 each  150 mm i/d  20 mm i/d  2 each  2573 Haryana PWD A  4 each  5709 6 dated 3-7-09  22,836  200 mm i/d  2 each  150 mm i/d  2 each  150 mm i/d  1 each  300 mm i/d  1 each  300 mm i/d  1 each  300 mm i/d  1 each  30395  400 mm i/d  4 each  4 1120		rubber sheet marked with IS 638 etc carriage,						
rehandling etc complete in all respect to the satisfaction of engineer in charge (Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY  80 mm i/d 0 each 2573 Haryana PWD A - 100 mm i/d 18 each 3698 & C slip No CZC-150 mm i/d 4 each 5709 6 dated 3-7-09 22,836 200 mm i/d 2 each 9945 250 mm i/d 2 each 15589 31,178 300 mm i/d 1 each 18944 350 mm i/d 1 each 30395 400 mm i/d each 41120 - 1								
satisfaction of engineer in charge ( Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY     0 each     2573     Haryana PWD A     -       80 mm i/d     18 each     3698     & C slip No CZC-     66,564       150 mm i/d     4 each     5709     6 dated 3-7-09     22,836       200 mm i/d     2 each     9945       250 mm i/d     2 each     15589     31,178       300 mm i/d     1 each     18944       350 mm i/d     1 each     30395     30,395       400 mm i/d     each     41120     -								
AARKO, VENUS, LEADER, SI, PANJA, UPADHAY  80 mm i/d  100 mm i/d  18 each  150 mm i/d  200 mm i/d  2 each  2573 Haryana PWD A  4 each  5709  6 dated 3-7-09  22,836  200 mm i/d  2 each  9945  250 mm i/d  2 each  1589  300 mm i/d  1 each  18944  350 mm i/d  1 each  30395  400 mm i/d  4 each  41120  -								
UPADHAY     0     each     2573     Haryana PWD A     -       100 mm i/d     18 each     3698     & C slip No CZC-     66,564       150 mm i/d     4 each     5709     6 dated 3-7-09     22,836       200 mm i/d     2 each     9945     19,890       250 mm i/d     2 each     15589     31,178       300 mm i/d     1 each     18944       350 mm i/d     1 each     30395       400 mm i/d     each     41120     -								
80 mm i/d 0 each 2573 Haryana PWD A - 100 mm i/d 18 each 3698 & C slip No CZC- 150 mm i/d 4 each 5709 6 dated 3-7-09 22,836 200 mm i/d 2 each 9945 250 mm i/d 2 each 15599 300 mm i/d 1 each 18944 350 mm i/d 1 each 30395 400 mm i/d each 41120 -		AARKO, VENUS, LEADER, SI, PANJA,						
80 mm i/d 0 each 2573 Haryana PWD A - 100 mm i/d 18 each 3698 & C slip No CZC- 150 mm i/d 4 each 5709 6 dated 3-7-09 22,836 200 mm i/d 2 each 9945 250 mm i/d 2 each 15599 300 mm i/d 1 each 18944 350 mm i/d 1 each 30395 400 mm i/d each 41120 -		UPADHAY						
100 mm i/d     18 each     3698 & C slip No CZC-     66,564       150 mm i/d     4 each     5709 6 dated 3-7-09     22,836       200 mm i/d     2 each     9945 945     19,890       250 mm i/d     2 each     15589     31,178       300 mm i/d     1 each     18944     18,944       350 mm i/d     1 each     30395 30,395     30,395       400 mm i/d     each     41120     -			^	aaab	2572	Homiono DUID		
150 mm i/d     4 each     5709     6 dated 3-7-09     22,836       200 mm i/d     2 each     9945     19,890       250 mm i/d     2 each     1558     31,178       300 mm i/d     1 each     18944       350 mm i/d     1 each     30395       400 mm i/d     each     41120							-	
200 mm i/d     2 each     9945     19,890       250 mm i/d     2 each     15589     31,178       300 mm i/d     1 each     18944     18,944       350 mm i/d     1 each     30395     30,395       400 mm i/d     each     41120     -								
200 mm i/d     2 each     9945     19,890       250 mm i/d     2 each     15589     31,178       300 mm i/d     1 each     18944     18,944       350 mm i/d     1 each     30395     30,395       400 mm i/d     each     41120     -		150 mm i/d	4	each	5709	6 dated 3-7-09	22,836	
250 mm i/d     2 each     15589     31,178       300 mm i/d     1 each     18944     18,944       350 mm i/d     1 each     30395     30,395       400 mm i/d     each     41120     -					9945	1		
300 mm i/d 1 each 18944 350 mm i/d 1 each 30395 400 mm i/d each 41120 -						4		
350 mm i/d 1 each 30395 400 mm i/d each 41120 -								
400 mm i/d each 41120 -					18944			
400 mm i/d each 41120 -		350 mm i/d	1	each	30395		30,395	
							<u>-</u>	
		450 mm i/d		each	48981		-	
500 mm i/d each 66911 -				each			-	
600 mm i/d each 95126 -		600 mm i/d		each	95126		-	

8	Providing and fixing cast iron single air valves				Haryana PWD A		size of air valve taken one sixth of
	marked with IS 14845 including carriage,				& C Slip CZC/3-7-		pipe dia and nomber of air valves
	loading, unloading, stacking, handling,				09		taken at one per km
	rehandling etc drilling, tapping, screwing etc in				0)		taken at one per kin
	valve connections complete in all respect to the						
	satisfaction of engineer-in-charge						
	40 mm i/d		each	1619		45,332	
_	50 mm i/d	0	each	1771		-	
9	Providing and fixing cast iron double air valves						
	marked with IS 14845 including carriage,						
	loading, unloading, stacking, handling,						
	rehandling etc drilling, tapping, screwing etc in						
	valve connections complete in all respect to the						
	satisfaction of engineer-in-charge						
	65 mm i/d	0	each	1883	Haryana PWD A	-	
	80 mm i/d	0	each	2103	& C Slip CZC/3-7-	-	
	100 mm i/d	0	each	2491	09	-	
10	Providing and fixing cast iron kinetic air valves						
	marked with IS 14845 including carriage,						
l	loading, unloading, stacking, handling,						
l	rehandling etc drilling, tapping, screwing etc in						
l	valve connections complete in all respect to the						
l	satisfaction of engineer-in-charge						
	satisfaction of engineer-in-charge						
	80 mm i/d	0	each	2024	Hamiona DWD A		
	80 mm i/d 100 mm i/d		each		Haryana PWD A & C Slip CZC/3-7-		
	150 mm i/d		each	7514		<u> </u>	
			each		09		
1.1	200 mm i/d			13267	T C	200.000	
11	Sluice valve and air valve chamber:	56	each	5000	LS	280,000	
	Providing and constructing Brick masonry						
	valve chamber with 15 cm thick 1:3:6						
	proportion PCC bedding, excluding excavation,						
	Brick masonry in C.M. 1:5 Proportion, 20 mm						
	thick 1:4 plaster, precast RCC frame and cover,						
	etc. complete as directed by Engineer-in-charge.						
	(Wall thickness : 0.23 M for depth of 1.2 M and						
	0.35 M for balance depth exceeding 1.2 M)						
12	Thrust Block: Providing and laying cement	185.85	cum	2754	Haryana PWD	511,742	
1	concrete in RCC (M-15, 1:2:4) with stone	100.00		2134	item 10.79 plus	311,742	
					340% vide		
	aggregate 20 mm nominal size for thrust blocks						
	including compaction, curing, finishing,				amendment 23-1-		
	excluding cost of reinforcement & shuttering				09		
	etc., Complete as per drawings and						
l	specifications and as directed by Engineer.						
13	Thrust Block: Shuttering for precast plain or	743.4	Sqm	40	Haryana PWD	30,080	
	RC concrete wall plates, bed plates shelves etc				item 9.15		
					plus225% vide		
					amendment 23-1-		
					09		
l							
14	Providing TMT Steel Reinforcement as per IS:	74	Quintal	4127	Haryana PWD	306,781	
	1786 for RCC work including straightening,	, -	~ ········	712/	item 18.22 plus	500,701	
l	cutting, bending, placing in position and				350% vide		
l	binding etc as per drawing all complete				amendment 23-1-		
	including cost of binding wire, labour, wastage				09		
	etc.				Už		
15	Road Work:					2,693,505	
16	Mislenious Items					1,795,670	
10	Total					22,445,875	
ı	1 Otal					22,443,873	1

# $\ \, \textbf{Detailed Estimate for Distribution System - Zone 15} \\$

S No	Item	Quantity	Unit	Rate	Reference for Rate	Amount	Quantity Reference/Calculations
1	Excavation for pipelines running under pressure in trenches and pits, in streets and lanes including trimming and dressing sides, levelling of beds of trenches to correct grade, cutting joint holes, cutting trees and bushes, etc. refilling consolidation and watering of refill, in 15 cm layers and restoration of unmetalled or unpaved surface to its original condition, including the cost of dewatering of rain water, diversion of traffic, night signals, fixing caution boards, crossing over trenches for access to the houses, watching, fancing etc. and disposal of surplus soil outside and inside the town, involving lead upto one km in ordinary soil (for new pipe line and replacement pipes)				Item 6.9 Haryana PWD & 300% above vide amendment dated 1.1 08 and 23.1.09		Trench Width is pipe dia plus 300 mm, Minimum earth cover of 1 meter, average earth cover of 1.15 m, Average depth of excavation is 1.15 plus pipe dia. For 110 mm pipe excavation is (1.15+.11)*(.3+.11) ie 0.5166*L where L is length of Pipe
A	Without timbering and shoring upto 1.5 metres depth	13764	100 CUM	4732		651,305	
В	Excavation for thrust block	154.7	100	4732		7,319	
D	With timbering and shoring exceeding 1.5	5		6492		325	
2	metres depth, but upto 2.25 metres depth Supply, Laying, Jointing, Field Testing, Commissioning complete at site of HDPE (PE 80 Grade Coumpound) Pipes PN-8.0 (8.0 kg/sqcm) as per IS:4984 and specifications for water application, including all cost of material, labour required, transportation, loading, unloading & stacking etc. complete. (New Pipe Line)		CUM				Factor for Excavation Quantity
	110 mm	8468	RM	310	RA	2,627,567	0.5166
	125 mm		RM	399		84,606	0.5334
	140 mm	212.5 467.5		499		106,029	0.5676
	160 mm 180 mm		RM	650 825		304,065 260,586	0.6026 0.6384
	200 mm	1332.5		1016		1,354,075	0.675
	225 mm	107.5	RM	1282	RA	137,788	0.7314
	250 mm	581.5		1585		921,736	0.77
	315 mm	618.5		2511		1,553,130	0.8906
	355 mm 400 mm	206.5 232.5		3180 4129		656,653 960,087	0.975 1.085
	Sub Total	12755		412)	IC/I	700,007	1.003
3	Supply, Laying, Jointing, Field Testing, Commissioning complete at site of HDPE (PE80 Grade Coumpound) Pipes PN-8.0 (8.0 kg/sqcm) as per IS:4984 and specifications for water application, including all cost of material, labour required, transportation, loading, unloading & stacking etc. complete. (replacement of line with a new pipeline)						
	125 mm	3837.5		399		1,531,488	0.5334
	140 mm	2284		499		1,139,625	0.5676
	160 mm	2465		650		1,603,251	0.6026
	180 mm 200 mm		RM RM	825 1016		389,229 471,513	0.6384 0.675
	200 mm 225 mm		RM	1282		174,317	0.7314
	250 mm	204.5		1585		324,153	0.7314
	280 mm	52.5		1984		104,145	0.8294
	315 mm	283.5		2511		711,903	0.8906
l	355 mm		RM	3180	RA	677,323	0.975
	400 mm		RM	4129	RA	144,529	1.085

	I=						
4	Dismantling pipeline of	10447	RM	12	LS	125,364	
	G.I./A.C./P.V.C./S.W./H.D.P.E. pipe including						
	breaking the joints, lifting the pipes and						
	stacking to the place as directed by Engineer-in-						
	charge with all leads and lifts including						
	cleaning the surface, etc. complete. (In place of						
	dismentaled pipe another pipe is to be laid as						
	such excavation for dismentalling is included						
	in excavation for laying new pipe line)						
	in eneuvation for taying new pipe inter						
_	Di di di di di di						
5	Dismentaling flanged joints for cast iron pipes,						
	valves and specials including carriage of bolts,						
	nuts and washers to store,						
	50 to 100 mm internal diameter of pipe, valve,	20	Per	3.50	Haryana PWD	70	
	special		Joint	2.20	item 28.38	, ,	
	125 to 200 mm internal diameter of pipe,	12	Per	6.83	plus 250%	82	
	valve special	12	Ioint	0.03	vide	02	
	300 to 375 mm internal diameter of pipe,	8	Per	17.50	amendment dt	140	
	valve special		Ioint		amendment ut		
7	Providing and fixing cast iron double flanged				$\top$		Quantity of valves taken
	sluice valves PN -1.6 marked with IS 14846						roughly at one per KM
	including nuts and bolts marked with IS 1363,						
	rubber sheet marked with IS 638 etc carriage,						
	loading, unloading, stacking, handling,						
	rehandling etc complete in all respect to the						
	satisfaction of engineer in charge ( Makes						
	AARKO, VENUS, LEADER, SI, PANJA,						
	100 mm i/d	12	each	2600	Haryana PWD	48,074	
-	150 mm i/d 150 mm i/d				A & C slip No		
-			each		• •	34,254	
-	200 mm i/d		each		CZC-6 dated 3-	19,890	
	250 mm i/d		each	15589	/-09	31,178	
	300 mm i/d		each	18944	<u> </u>	37,888	
	350 mm i/d	1	each	30395		30,395	
L	400 mm i/d	1	each	41120		41,120	
8	Providing and fixing cast iron single air valves	·	T				size of air valve taken one
	marked with IS 14845 including carriage,						sixth of pipe dia and nomber
	loading, unloading, stacking, handling,						of air valves taken at one per
	rehandling etc drilling, tapping, screwing etc in						km
	valve connections complete in all respect to the						
	satisfaction of engineer-in-charge						
	40 mm i/d	23	each	1619	Haryana PWD	37,237	
					1000		
11	Sluice valve and air valve chamber:	50	each	5000	LS	250,000	
	Providing and constructing Brick masonry						
	valve chamber with 15 cm thick 1:3:6						
	proportion PCC bedding, excluding						
	excavation, Brick masonry in C.M. 1:5						
	Proportion, 20 mm thick 1:4 plaster, precast						
	RCC frame and cover, etc. complete as						
	directed by Engineer-in-charge. (Wall						
	thickness: 0.23 M for depth of 1.2 M and 0.35						
12	Thrust Block: Providing and laying cement	154.68	our	2754	Haryana PWD	425.014	
12		134.68	cum	2/54	-	425,914	
	concrete in RCC (M-15, 1:2:4) with stone				item 10.79		
	aggregate 20 mm nominal size for thrust				plus 340%		
Ī	blocks including compaction, curing, finishing,				vide		
	excluding cost of reinforcement & shuttering				amendment 23-		
	etc., Complete as per drawings and				1-09		
	specifications and as directed by Engineer.						
13	Thrust Block: Shuttering for precast plain or	618.72	Sqm	40	Haryana PWD	25,035	
	RC concrete wall plates, bed plates shelves etc				item 9.15		
L	D. III. M. C. I.D. I.C.		0 .		nlus225% vide	A = = A = -	
14	Providing TMT Steel Reinforcement as per IS:	62	Quinta	4127	Haryana PWD	255,329	
	1786 for RCC work including straightening,		1		item 18.22		
	cutting, bending, placing in position and				plus 350%		
	binding etc as per drawing all complete				vide		
	including cost of binding wire, labour, wastage				amendment 23-		
	etc.				1-09		
15	Road Work:					2,738,808	
16	Mislenious Items					1,825,872	
						1,020,072	Ĺ
10	Total					22,823,397	

S No	Item	Quantity	Unit	Rate	Reference for Rate	Amount	Quantity
							Reference/Calculations
	Excavation for pipelines running under pressure in trenches and pits, in streets and lanes including trimming and dressing sides, levelling of beds of trenches to correct grade, cutting joint holes, cutting trees and bushes, etc. refilling consolidation and watering of refill, in 15 cm layers and restoration of unmetalled or unpaved surface to its original condition, including the cost of dewatering of rain water, diversion of traffic, night signals, fixing caution boards, crossing over trenches for access to the houses, watching, fancing etc. and disposal of surplus soil outside and inside the town, involving lead upto one km				Item 6.9 Haryana PWD & 300% above vide amendment dated 1.1 08 and 23.1.09		Trench Width is pipe dia plus 300 mm, Minimum earth cover of 1 meter, average earth cover of 1.15 m, Average depth of excavation is 1.15 plus pipe dia. For 110 mm pipe excavation is (1.15+.11)*(.3+.11) ie 0.5166*L where L is length of Pipe
	in ordinary soil (for new pipe line and replacement pipes)						
	Without timbering and shoring upto 1.5 metres depth		100 CUM	4732		1,112,243	
	Excavation for thrust block	290.5	100 CUM	4732		13,745	
С	With timbering and shoring upto 1.5 metres depth		100 CUM	6300		-	
	With timbering and shoring exceeding 1.5 metres depth, but upto 2.25 metres depth		100 CUM	6492		-	
Е	With timbering and shoring exceeding 2.25		100 CUM	6992		-	
	metres depth, but upto 3 metres depth						
	Supply, Laying, Jointing, Field Testing, Commissioning complete at site of HDPE (PE 80 Grade Coumpound) Pipes PN-8.0 (8.0 kg/sqcm) as per IS:4984 and specifications for water application, including all cost of material, labour required, transportation, loading, unloading & stacking etc. complete. (New Pipe Line)						Factor for Excavation Quantity
	110 mm	24965.5	RM	310	RA	7,746,638	0.5166
	125 mm	2232.5		399		890,957	0.5334
	140 mm 160 mm	2004.5 1347		499 650		1,000,165 876,097	0.5676 0.6026
	180 mm		RM	825		238,320	0.6384
	200 mm		RM	1016		533,501	0.675
	225 mm		RM	1282		-	0.7314
	250 mm	278.5		1585		441,451	0.77
	280 mm 315 mm	30.5	RM RM	1984 2511		76,589	0.8294 0.8906
	355 mm	30.3	RM	3180		-	0.975
	400 mm		RM	4129		-	1.085
	450 mm		RM	5226		-	1.2
	500 mm Sub Total	31673	RM RM	6443	RA	-	1.32
3	Supply, Laying, Jointing, Field Testing, Commissioning complete at site of HDPE (PE80 Grade Coumpound) Pipes PN-8.0 (8.0 kg/sqcm) as per IS:4984 and specifications for water application, including all cost of material, labour required, transportation, loading, unloading & stacking etc. complete. (replacement of line with a new pipeline)	2.073					
	110 mm	7497.5	RM	310	RA	2,326,427	0.5166
	125 mm	1086	RM	399	RA	433,406	0.5334
	140 mm	423.5		499		211,310	
	160 mm 180 mm	381 1045	RM RM	650 825		247,805 861,747	0.6026 0.6384
	200 mm	658.5		1016		669,162	0.675
	225 mm		RM	1282	RA	-	0.7314
	250 mm		RM	1585		841,689	0.77
	280 mm	160	RM RM	1984		317,396	0.8294 0.8906
	315 mm 355 mm	114	RM RM	2511 3180		362,511	0.8906
	400 mm	114	RM	4129		302,311	1.085
	450 mm		RM	5226		-	1.2
1	500 mm		RM	6443	RA	-	1.32

4	Dismantling pipeline of	11897	RM	12	LS	142,764	
	G.I./A.C./P.V.C./S.W./H.D.P.E. pipe including	,				- 1-,1 - 1	
	breaking the joints, lifting the pipes and stacking						
	to the place as directed by Engineer-in-charge						
	with all leads and lifts including cleaning the						
	surface, etc. complete. (In place of dismentaled						
	pipe another pipe is to be laid as such excavation						
	for dismentalling is included in excavation for						
	laying new pipe line)						
	, 5						
	80 mm.		R.M.			-	
	100 mm.		R.M.			-	
	125 mm.		R.M.			-	
	150 mm.		R.M.			-	
	200 mm.		R.M.			-	
	250 mm.		R.M.			-	
	300 mm.		R.M.			-	
	350 mm.		R.M.			-	
			R.M.				
	400 mm.					-	
	450 mm.		R.M.			-	
_	500 mm.		R.M.			-	
5	Dismentaling flanged joints for cast iron pipes,						
5	valves and specials including carriage of bolts,						
	nuts and washers to store,						
	50 to 100 mm internal diameter of pipe, valve,	20	Per Joint	3 50	Haryana PWD item	70	
		20	1 CI JUIII	3.50		/0	
	special				28.38 plus 250%		
	125 to 200 mm internal diameter of pipe, valve,	16	Per Joint	6.83	vide amendment dt	109	
	special				23-1-09		
	300 to 375 mm internal diameter of pipe, valve,	6	Per Joint	17.50		105	
	1 1	0	rei Joint	17.30		103	
	special						
	400 to 450 mm internal diameter of pipe, valve,			19.95		-	
	special						
	500 to 525 mm internal diameter of pipe, valve,			22.05		_	
	1 1			22.03		-	
	special						
6	Taking out dismentaled cast iron socketed or					_	
	flanged pipes, valves and specials etc outside						
	from the trenches and stacking at a nearest						
	convenient place						
	80 mm.		10 m	18.20	Haryana PWD item	-	
	100 mm.		10 m	22.23	28.38 plus 250%	_	
					vide amendment dt		
	125 mm.		10 m	22.75		-	
	150 mm.		10 m	27.13	23-1-09	-	
	200 mm.		10 m	36.23		-	
	250 mm.		10 m	49.18		_	
			-				
	300 mm.		10 m	57.58		-	
	350 mm.		10 m	72.63		-	
	400 mm.		10 m	95.73		-	
	450 mm.		10 m	107.45		_	
	500 mm.		10 m	115.33		-	
7	Providing and fixing cast iron double flanged					-	Quantity of valves taken roughly
	sluice valves PN -1.6 marked with IS 14846						at one per KM
	including nuts and bolts marked with IS 1363,						*
	rubber sheet marked with IS 638 etc carriage,						
	loading, unloading, stacking, handling, rehandling						
	etc complete in all respect to the satisfaction of						
	engineer in charge ( Makes AARKO, VENUS,						
	LEADER, SI, PANJA, UPADHAY						
	LEADER, SI, FAINJA, UPADHA I						
				<u></u>			
	80 mm i/d	0	each	2573	Haryana PWD A &	-	
			each		C slip No CZC-6	133,128	
			CUCII		dated 3-7-09	28,545	
	100 mm i/d					7x 545	1
	100 mm i/d 150 mm i/d	5	each		dated 3-7-09		
	100 mm i/d	5	each each	5709 9945	dated 3-7-09	19,890	
	100 mm i/d 150 mm i/d 200 mm i/d	5	each	9945	dated 3-7-09		
	100 mm i/d 150 mm i/d 200 mm i/d 250 mm i/d	5 2 1	each each	9945 15589	dated 3-7-09	19,890 15,589	
	100 mm i/d 150 mm i/d 200 mm i/d 250 mm i/d 300 mm i/d	5 2 1 1	each each each	9945 15589 18944	dated 3-7-09	19,890 15,589 18,944	
	100 mm i/d 150 mm i/d 200 mm i/d 250 mm i/d 300 mm i/d 350 mm i/d	5 2 1 1	each each	9945 15589 18944 30395	uateu 3-7-09	19,890 15,589	
	100 mm i/d 150 mm i/d 200 mm i/d 250 mm i/d 300 mm i/d	5 2 1 1	each each each	9945 15589 18944	uateu 5-7-09	19,890 15,589 18,944	
	100 mm i/d 150 mm i/d 200 mm i/d 250 mm i/d 300 mm i/d 350 mm i/d 400 mm i/d	5 2 1 1	each each each each	9945 15589 18944 30395 41120	uateu 5-7-09	19,890 15,589 18,944 30,395	
	100 mm i/d 150 mm i/d 200 mm i/d 250 mm i/d 300 mm i/d 350 mm i/d 400 mm i/d 450 mm i/d	5 2 1 1	each each each each each	9945 15589 18944 30395 41120 48981	ualeu 3-7-09	19,890 15,589 18,944 30,395	
	100 mm i/d 150 mm i/d 200 mm i/d 250 mm i/d 300 mm i/d 350 mm i/d 400 mm i/d	5 2 1 1	each each each each	9945 15589 18944 30395 41120		19,890 15,589 18,944 30,395	

8	Providing and fixing cast iron single air valves marked with IS 14845 including carriage, loading, unloading, stacking, handling, rehandling etc drilling, tapping, screwing etc in valve connections complete in all respect to the satisfaction of engineer-in-charge				size of air valve taken one sixth of pipe dia and nomber of air valves taken at one per km
	40 mm i/d	44 each	1619 Haryana PWD A &	71,236	
	50 mm i/d	0 each	1771 C Slip CZC/3-7-09	-	
9	Providing and fixing cast iron double air valves marked with 1S 14845 including carriage, loading, unloading, stacking, handling, rehandling etc drilling, tapping, screwing etc in valve connections complete in all respect to the satisfaction of engineer-in-charge				
	65 mm i/d	0 each	1883 Haryana PWD A &	-	
	80 mm i/d	0 each	2103 C Slip CZC/3-7-09	-	
	100 mm i/d	0 each	2491	-	
10	Providing and fixing cast iron kinetic air valves marked with IS 14845 including carriage, loading, unloading, stacking, handling, rehandling etc drilling, tapping, screwing etc in valve connections complete in all respect to the satisfaction of engineer-in-charge				
	80 mm i/d	0 each	2824 Haryana PWD A &	-	
	100 mm i/d	0 each	3098 C Slip CZC/3-7-09	-	
	150 mm i/d	0 each	7514	-	
	200 mm i/d	0 each	13267	-	
11	Sluice valve and air valve chamber: Providing and constructing Brick masonry valve chamber with 15 cm thick 1:3:6 proportion PCC bedding, excluding excavation, Brick masonry in C.M. 1:5 Proportion, 20 mm thick 1:4 plaster, precast RCC frame and cover, etc. complete as directed by Engineer-in-charge. (Wall thickness: 0.23 M for depth of 1.2 M and 0.35 M for balance depth exceeding 1.2 M)	90 each	5000 LS	450,000	
12	Thrust Block: Providing and laying cement concrete in RCC (M-15, 1:2:4) with stone aggregate 20 mm nominal size for thrust blocks including compaction, curing, finishing, excluding cost of reinforcement & shuttering etc., Complete as per drawings and specifications and as directed by Engineer.	290.46 cum	2754 Haryana PWD item 10.79 plus 340% vide amendment 23- 1-09	799,787	
13	Thrust Block: Shuttering for precast plain or RC concrete wall plates, bed plates shelves etc	1161.84 Sqm	40 Haryana PWD item 9.15 plus225% vide amendment 23-1-09	47,011	
14	Providing TMT Steel Reinforcement as per IS: 1786 for RCC work including straightening, cutting, bending, placing in position and binding etc as per drawing all complete including cost of binding wire, labour, wastage etc.	116 Quintal	4127 Haryana PWD item 18.22 plus 350% vide amendment 23- 1-09	479,459	
15	Road Work:			3,215,729	
16	Mislenious Items			2,143,819	
1	Total			26,797,738	

	Detailed Estimate	for Distrib	ution Syste	m - Zone	17		T.
S No	Item	Quantity	Unit	Rate	Reference for	Amount	Quantity
5110	Tem .	Quantity	CIIIC	ruite	Rate	rimount	Reference/Calculations
1	Excavation for pipelines running under pressure in trenches and pits,				Item 6.9		Trench Width is pipe dia
	in streets and lanes including trimming and dressing sides, levelling				Haryana PWD		plus 300 mm, Minimum
	of beds of trenches to correct grade, cutting joint holes, cutting trees				& 300% above		earth cover of 1 meter,
	and bushes, etc. refilling consolidation and watering of refill, in 15				vide		average earth cover of 1.15
	cm layers and restoration of unmetalled or unpaved surface to its				amendment		m, Average depth of
	original condition, including the cost of dewatering of rain water,				dated 1.1 08		excavation is 1.15 plus pipe
	diversion of traffic, night signals, fixing caution boards, crossing				and 23.1.09		dia. For 110 mm pipe
	over trenches for access to the houses, watching, fancing etc. and						excavation is
	disposal of surplus soil outside and inside the town, involving lead						(1.15+.11)*(.3+.11) ie
	upto one km in ordinary soil (for new pipe line and replacement						0.5166*L where L is length
	pipes)						of Pipe
A	Without timbering and shoring upto 1.5 metres depth	26292	100 CUM	4732		1,244,123	
В	Excavation for thrust block		100 CUM	4732		15,557	
D	Wide Line Line P. 15 of Labor.			6492		649	
	With timbering and shoring exceeding 1.5 metres depth, but upto 2.25 metres depth	10	100 CUM	0492		049	
2							Factor for Excavation
	site of HDPE (PE 80 Grade Coumpound) Pipes PN-8.0 (8.0						Quantity
	kg/sqcm) as per IS:4984 and specifications for water application,						
	including all cost of material, labour required, transportation, loading, unloading & stacking etc. complete. (New Pipe Line)						
	110 mm 125 mm	24262 3124		310 399		7,528,346 1,246,741	0.5166 0.5334
	140 mm	1915		499		955,508	0.5534
	160 mm	735.5		650		478,374	0.6026
	180 mm	719.5		825	RA	593,327	0.6384
	200 mm	1178		1016		1,197,074	0.675
	225 mm	231.5	RM	1282	RA	296,724	0.7314
	250 mm	168	RM	1585	RA	266,297	0.77
	280 mm	119.5	RM	1984	RA	237,055	0.8294
	315 mm	30.5	RM	2511	RA	76,589	0.8906
	355 mm		RM	3180		260,753	0.975
	400 mm		RM	4129	RA	421,199	1.085
	Sub Total	32668	RM				
3	Supply, Laying, Jointing, Field Testing, Commissioning complete at						
	site of HDPE (PE80 Grade Coumpound) Pipes PN-8.0 (8.0						
	kg/sqcm) as per IS:4984 and specifications for water application,						
	including all cost of material, labour required, transportation,						
	loading, unloading & stacking etc. complete. (replacement of line with a new pipeline)						
	110 mm	14270.5	DM	310	RA	4,428,047	0.5166
	110 mm 125 mm	1623		399		647,715	0.5100
	140 mm		RM	499		186,112	0.5676
	160 mm	151.5		650		98,537	0.6026
	180 mm	188.5		825		155,444	0.6384
	200 mm	14.5		1016		14,735	0.675
	250 mm	26.5	RM	1585	RA	42,005	0.77
	Sub Total	16648	RM				

	Detailed Estimate	for Distrib	ution Syste	em - Zone	17		
S No	Item	Quantity	Unit	Rate	Reference for Rate	Amount	Quantity Reference/Calculations
4	Dismantling pipeline of G.I./A.C./P.V.C./S.W./H.D.P.E. pipe including breaking the joints, lifting the pipes and stacking to the place as directed by Engineer-in-charge with all leads and lifts including cleaning the surface, etc. complete. (In place of dismentaled pipe another pipe is to be laid as such excavation for dismentalling is included in excavation for laying new pipe line)	16648	RM	12	LS	199,776	
5	Dismentaling flanged joints for cast iron pipes, valves and specials including carriage of bolts, nuts and washers to store,						
	50 to 100 mm internal diameter of pipe, valve, special	30	Per Joint	3.50	Haryana PWD item 28.38 plus	105	
	125 to 200 mm internal diameter of pipe, valve, special	20		6.83	250% vide amendment dt	137	
	300 to 375 mm internal diameter of pipe, valve, special	10	Per Joint	17.50	23-1-09	175	
6	Taking out dismentaled cast iron socketed or flanged pipes, valves and specials etc outside from the trenches and stacking at a nearest convenient place					-	
7	Providing and fixing cast iron double flanged sluice valves PN -1.6 marked with IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS 638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge ( Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY				Haryana PWD A & C slip No CZC-6 dated 3- 7-09		Quantity of valves taken roughly at one per KM
	100 mm i/d	43	each	3698		159,014	
	150 mm i/d	4	each	5709		22,836	
	200 mm i/d		each	9945		29,835	
	250 mm i/d		each	15589		31,178	
	300 mm i/d		each	18944		18,944	
	350 mm i/d 400 mm i/d		each each	30395 41120		30,395 41,120	
8	Providing and fixing cast iron single air valves marked with IS 14845 including carriage, loading, unloading, stacking, handling, rehandling etc drilling, tapping, screwing etc in valve connections complete in all respect to the satisfaction of engineer-in-charge		out.	11120	Haryana PWD A & C Slip CZC/3-7-09	11,120	size of air valve taken one sixth of pipe dia and nomber of air valves taken at one per km
	40 mm i/d	49	each	1619		79,331	
11	Sluice valve and air valve chamber: Providing and constructing Brick masonry valve chamber with 15 cm thick 1:3:6 proportion PCC bedding, excluding excavation, Brick masonry in C.M. 1:5 Proportion, 20 mm thick 1:4 plaster, precast RCC frame and cover, etc. complete as directed by Engineer-in-charge. (Wall thickness: 0.23 M for depth of 1.2 M and 0.35 M for balance depth exceeding 1.2 M)	103	each	5000	LS	515,000	
12	<b>Thrust Block:</b> Providing and laying cement concrete in RCC (M-15, 1:2:4) with stone aggregate 20 mm nominal size for thrust blocks including compaction, curing, finishing, excluding cost of reinforcement & shuttering etc., Complete as per drawings and specifications and as directed by Engineer.	328.7667	cum	2754	Haryana PWD item 10.79 plus 340% vide amendment 23- 1-09	905,266	
13	Thrust Block: Shuttering for precast plain or RC concrete wall plates, bed plates shelves etc	1315.067	Sqm	40	Haryana PWD item 9.15 plus225% vide	53,211	
14	Providing TMT Steel Reinforcement as per IS: 1786 for RCC work including straightening, cutting, bending, placing in position and binding etc as per drawing all complete including cost of binding wire, labour, wastage etc.	132	Quintal	4127	Haryana PWD item 18.22 plus 350% vide amendment 23- 1-09	542,692	
	Road Work:	1	1	1		3452988.84	.[
15 16	Mislenious items					2,301,993	

Detailed Estimate for Distribution System - Zone 18							
S No	Item	Quantity	Unit	Rate	Reference for Rate	Amount	Quantity Reference/Calculations
1	Excavation for pipelines running under pressure in trenches and pits, in streets and lanes including trimming and dressing sides, levelling of beds of trenches to correct grade, cutting joint holes, cutting trees and bushes, etc. refilling consolidation and watering of refill, in 15 cm layers and restoration of unmetalled or unpaved surface to its original condition, including the cost of dewatering of rain water, diversion of traffic, night signals, fixing caution boards, crossing over trenches for access to the houses, watching, fancing etc. and disposal of surplus soil outside and inside the town, involving lead upto one km in ordinary soil (for new pipe line and replacement pipes)				Item 6.9 Haryana PWD & 300% above vide amendment dated 1.1 08 and 23.1.09		Trench Width is pipe dia plus 300 mm, Minimum earth cover of 1 meter, average earth cover of 1.15 m, Average depth of excavation is 1.15 plus pipe dia. For 110 mm pipe excavation is (1.15+.11)*(.3+.11) ie 0.5166*L where L is length of Pipe
A	Without timbering and shoring upto 1.5 metres depth	3043	100 CUM	4732		144,012	
В	Excavation for thrust block	34.0	100 CUM	4732		1,611	
С	With timbering and shoring upto 1.5 metres depth		100 CUM	6300		-	
D	With timbering and shoring exceeding 1.5 metres depth, but upto 2.25 metres depth		100 CUM	6492		-	
Е	With timbering and shoring exceeding 2.25 metres depth, but upto 3 metres depth		100 CUM	6992		-	
2	Supply, Laying, Jointing, Field Testing, Commissioning complete at site of HDPE (PE 80 Grade Coumpound) Pipes PN-8.0 (8.0 kg/sqcm) as per IS:4984 and specifications for water application, including all cost of material, labour required, transportation, loading, unloading & stacking etc. complete. (New Pipe Line)						Factor for Excavation Quantity
	110 mm 125 mm	73 128.5	RM	310 399	RA RA	22,651 51,282	0.5166 0.5334
	140 mm	1041		499	RA	519,417	0.5676
	160 mm	10.11	RM	650	RA	-	0.6026
	180 mm		RM	825	RA	-	0.6384
	200 mm 225 mm		RM RM	1016 1282	RA RA	-	0.675
	250 mm		RM RM	1585	RA	-	0.7314 0.77
	280 mm	62.5		1984	RA	123,983	0.8294
	315 mm		RM	2511	RA	411,824	0.8906
	355 mm		RM	3180		-	0.975
	400 mm		RM RM	4129 5226	RA RA	-	1.085
	450 mm 500 mm		RM	6443	RA	-	1.32
3	Sub Total  Supply, Laying, Jointing, Field Testing, Commissioning complete at site of HDPE (PE80 Grade Coumpound)  Pipes PN-8.0 (8.0 kg/sqcm) as per IS:4984 and specifications for water application, including all cost of material, labour required, transportation, loading, unloading, & stacking etc. complete. (raplecement of line)	1469	RM				
	110 mm	276.5		310	RA	85,796	0.5166
	125 mm 140 mm	1255.5	RM RM	399 499	RA RA	501,051 338,794	0.5334 0.5676
	140 mm 160 mm		RM	650	RA	363,577	0.5676
	180 mm		RM	825	RA	234,197	0.6384
	200 mm	263.5	RM	1016		267,766	0.675
	225 mm	14.5		1282	RA	18,585	0.7314
	250 mm	176.5		1585	RA	279,770	0.77
	280 mm	121.5	RM RM	1984	RA DA	241,022	0.8294
	315 mm 355 mm	8	RM RM	2511 3180	RA RA	20,089	0.8906 0.975
	400 mm		RM	4129	RA	-	1.085
	450 mm		RM	5226		-	1.20
	500 mm		RM	6443	RA	-	1.32
	Sub Total	3638	RM				

	Detailed Estin	nate for Dis	stribution S	System - Z	Zone 18		
S No	Item	Quantity	Unit	Rate	Reference for Rate	Amount	Quantity Reference/Calculations
4	Dismantling pipeline of G.I./A.C./P.V.C./S.W./H.D.P.E. pipe including breaking the joints, lifting the pipes and stacking to the place as directed by Engineer-in-charge with all leads and lifts including cleaning the surface, etc. complete. (In place of dismentaled pipe another pipe is to be laid as such excavation for dismentalling is included in excavation for laying new pipe line)	3638	RM	12	LS	43,656	
	80 mm.		R.M.			-	
	100 mm.		R.M.				
	125 mm.		R.M.			-	
	150 mm.		R.M.			1	
	200 mm.		R.M.			-	
	250 mm.		R.M.			-	
	300 mm. 350 mm.		R.M. R.M.			-	
	400 mm.		R.M.			-	
	450 mm.		R.M.			-	
	500 mm.		R.M.			-	
5	Dismentaling flanged joints for cast iron pipes, valves and specials including carriage of bolts, nuts and washers to store,						
	50 to 100 mm internal diameter of pipe, valve, special	8			Haryana PWD	28	
	125 to 200 mm internal diameter of pipe, valve, special	6	Per Joint		item 28.38 plus 250%	41	
	300 to 375 mm internal diameter of pipe, valve, special	6	Per Joint	17.50	amendment dt	105	
	400 to 450 mm internal diameter of pipe, valve, special			19.95	23-1-09	-	
	500 to 525 mm internal diameter of pipe, valve, special			22.05		-	
6	Taking out dismentaled cast iron socketed or flanged pipes, valves and specials etc outside from the trenches and stacking at a nearest convenient place					-	
	80 mm.		10 m		Haryana PWD	-	
	100 mm.		10 m	22.23	item 28.38	-	
	125 mm. 150 mm.		10 m 10 m	22.75 27.13	plus 250% vide	-	
	200 mm.		10 m	36.23		-	
	250 mm.		10 m	49.18	23-1-09	-	
	300 mm.		10 m	57.58		-	
	350 mm.		10 m	72.63		1	
	400 mm.		10 m	95.73		-	
	450 mm.		10 m	107.45 115.33		-	
7	500 mm.  Providing and fixing cast iron double flanged sluice valves PN -1.6 marked with IS 14846 including nuts and bolts marked with IS 1363, rubber sheet marked with IS		10 m	113.33		-	Quantity of valves taken roughly at one per KM
	638 etc carriage, loading, unloading, stacking, handling, rehandling etc complete in all respect to the satisfaction of engineer in charge ( Makes AARKO, VENUS, LEADER, SI, PANJA, UPADHAY						
	80 mm i/d	0	each	2573	Haryana PWD	-	
	100 mm i/d		each	3698	A & C slip No	11,094	_
	150 mm i/d		each		CZC-6 dated 3-	11,418	
	200 mm i/d		each	9945	7-09	9,945	
	250 mm i/d		each	15589		15,589	
	300 mm i/d 350 mm i/d	1	each each	18944 30395		18,944	
	400 mm i/d		each	41120		-	
	450 mm i/d		each	48981		-	
	500 mm i/d		each	66911		-	
	600 mm i/d		each	95126		-	

	Detailed Estimate for Distribution System - Zone 18						
S No	Item	Quantity	Unit	Rate	Reference for Rate	Amount	Quantity Reference/Calculations
8	Providing and fixing cast iron single air valves marked with IS 14845 including carriage, loading, unloading, stacking, handling, rehandling etc drilling, tapping, screwing etc in valve connections complete in all respect to the satisfaction of engineer-in-charge				Haryana PWD A & C Slip CZC/3-7-09		size of air valve taken one sixth of pipe dia and nomber of air valves taken at one per km
	40 mm i/d		each	1619		8,095	
9	50 mm i/d Providing and fixing cast iron double air valves marked with IS 14845 including carriage, loading, unloading, stacking, handling, rehandling etc drilling, tapping, screwing etc in valve connections complete in all respect	0	each	1771		-	
	to the satisfaction of engineer-in-charge						
	65 mm i/d		each		Haryana PWD	-	
	80 mm i/d 100 mm i/d		each each		A & C Slip CZC/3-7-09	-	
10	Providing and fixing cast iron kinetic air valves marked with IS 14845 including carriage, loading, unloading, stacking, handling, rehandling etc drilling, tapping, screwing etc in valve connections complete in all respect to the satisfaction of engineer-in-charge						
	80 mm i/d		each		Haryana PWD	-	
	100 mm i/d		each		A & C Slip	-	
	150 mm i/d 200 mm i/d		each each	7514 13267	CZC/3-7-09	-	
11	Sluice valve and air valve chamber: Providing and constructing Brick masonry valve chamber with 15 cm thick 1:3:6 proportion PCC bedding, excluding excavation, Brick masonry in C.M. 1:5 Proportion, 20 mm thick 1:4 plaster, precast RCC frame and cover, etc. complete as directed by Engineer-in-charge. (Wall		each	5000	LS	65,000	
12	Thrust Block: Providing and laying cement concrete in RCC (M-15, 1:2:4) with stone aggregate 20 mm nominal size for thrust blocks including compaction, curing, finishing, excluding cost of reinforcement & shuttering etc., Complete as per drawings and specifications and as	34.05	cum	2754	Haryana PWD item 10.79 plus 340% vide amendment 23-	93,748	
13	Thrust Block: Shuttering for precast plain or RC concrete wall plates, bed plates shelves etc	136.19	Sqm	40	Haryana PWD item 9.15 plus225% vide amendment 23- 1-09	5,510	
14	Providing TMT Steel Reinforcement as per IS: 1786 for RCC work including straightening, cutting, bending, placing in position and binding etc as per drawing all complete including cost of binding wire, labour, wastage etc.	14	Quintal	4127	Haryana PWD item 18.22 plus 350% vide amendment 23- 1-09	56,200	
15	Road Work:					594,721	
16	Mislenious Items					396,480	
l	Total			1		4,956,006	

 ${\bf Appendix\ E-5}$  Cost Summary : Remodelling & Expansion of Distribution System in Zone 1 to Zone 18

Zone No	Estimated Cost (INR)	Reference
1	9,831,018	Refer Zone 1 Detailed Estimate
2	6,206,535	Refer Zone 2 Detailed Estimate
3	10,749,029	Refer Zone 3 Detailed Estimate
4	5,557,763	Refer Zone 4 Detailed Estimate
5	15,166,911	Refer Zone 5 Detailed Estimate
6	15,761,978	Refer Zone 6 Detailed Estimate
7	13,976,764	Refer Zone 7 Detailed Estimate
8	10,270,389	Refer Zone 8 Detailed Estimate
9	14,031,253	Refer Zone 9 Detailed Estimate
10	15,523,505	Refer Zone 10 Detailed Estimate
11	13,747,145	Refer Zone 11 Detailed Estimate
12	15,230,297	Refer Zone 12 Detailed Estimate
13	11,272,167	Refer Zone 13 Detailed Estimate
14	22,445,875	Refer Zone 14 Detailed Estimate
15	22,823,397	Refer Zone 15 Detailed Estimate
16	26,797,738	Refer Zone 16 Detailed Estimate
17	28,774,907	Refer Zone 17 Detailed Estimate
18	4,956,006	Refer Zone 18 Detailed Estimate
Total	263,122,678	

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